NAEB JOURNAL

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Planning travel research for the 1941 "Know Your Neighbor" series are the first Director of Radio at The University of Texas, J. Howard Lumpkin, and Alfredo Vasquez, who served as series consultant and travel guide and interpreter. (Story on page 19.)

On the cover: A Philadelphia Public Schools presentation over WHYY-TV. (See story on page 11.)

EDUCATIONAL PRESS ASSOCIATION OF AMERICA

THE NAEB JOURNAL VOL. 18 NO. 10 NOVEMBER 1959

The *NAEB JOURNAL*, published monthly except June, July, August and September by the National Association of Educational Broadcasters. *Business and editorial offices:* 14 *Gregory Hall, Urbana, Illinois.* All business and editorial copy, and all subscriptions, should be sent to 14 Gregory Hall, Urbana. Entered as second-class matter November 26, 1956, at the post office, Urbana, Illinois under the act of March 3, 1879. *The National Association of Educational Broadcasters* is incorporated under the laws of the State of Illinois as a non-profit organization for the purpose of furthering the use of radio and television for education. Subscriptions $4.00 a year.

Involve the Teachers

The use of radio and television to make more effective the work of schools and colleges is increasing. More and more their potential for direct teaching is being recognized while, at the same time, their value as supplementary and enrichment devices is gaining ground.

"Continental Classroom," which began a year ago telecasting a college-level atomic physics course (presented over 150 stations and offered for credit by 265 colleges and universities) was so successful that a new course in college-level chemistry was initiated this year and last year's physics course is being repeated. Thus one national television network is now setting aside a full hour each school day in what it believes to be a significant aid to the teaching of science. Equally significant programs are being presented by the growing number of educational television stations.

Occasionally, one hears staff members in schools and colleges expressing rather negative opinions about these two broadcast media. They seriously doubt that either radio or television is capable of teaching students as effectively as the classroom teacher. Furthermore, they see little educational value in programs designed to supplement the work of the teacher.

The writer is confident that the use of radio and television as significant elements in the educational process will continue to gain ground regardless of the skeptics. He does suggest, however, that, in the use of radio and television for direct teaching, two basic procedures must be followed:

First, radio and television station staffs must make sure that there will be a continuous involvement of competent classroom teachers in planning direct-teaching programs. This means real participation by these teachers in the actual planning as well as in the pre-testing of a sampling of the actual programs, rather than mere service as "honorary members" of committees that seldom or never meet.

Second, school and college administrators must make sure that the teachers of the grades or subjects for which the broadcasts are planned are involved personally in the plans for utilization and, before a program series begins, that they are given adequate briefing in effective use of the broadcasts, preferably through observing well-planned demonstration lessons given by teachers of known experience and competence in making

effective use of broadcast lessons.

Is it not true that the extent to which competently planned lessons can be provided by radio and television for use in schools will determine the amount of time which individual teachers will have for making the needed adjustments to individual differences in their classrooms?

—TRACY F. TYLER, *Editor*

Announcement

Beginning in January, 1960, the *NAEB Journal* will be issued on a bi-monthly basis, the year round. This will avoid skipping the four summer months, which has been done in the past.

Projects and Products

a column by Philip Lewis

Director, Bureau of Instruction Materials,
Board of Education, Chicago

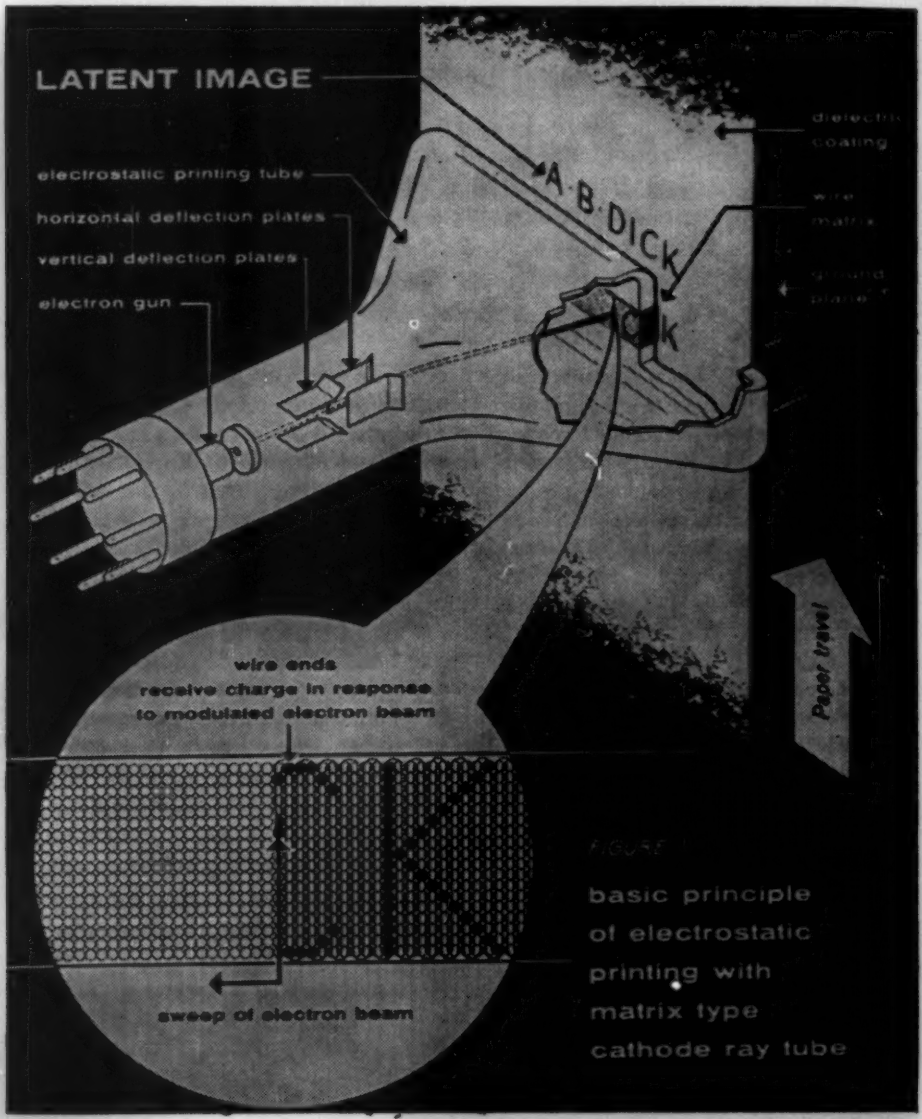
THE VIDEOGRAPH PROCESS

The A. B. Dick Company has adopted this name to designate its newly developed technique for converting electrical signals into printed records and displays at high speed. The origination or sending unit can be connected by coaxial cable or microwave relay to one or more remotely located printer units where the reproduction of facsimile copy can be made at the rate of three 8½" x 11" sheets per second. Designed to operate directly from a digital computer, magnetic tapes, or a television camera, the implications of this development for school and institutional record remoting and graphic intercommunication are especially exciting.

The key element in the Videograph Process is a special cathode-ray tube similar in principle to the "picture tube" employed in a conventional television receiver. Instead of a phosphor coating on the inside of the tube, however, a wire matrix is substituted. This feature is composed of tiny stainless steel wires spaced 250 to the inch and fused into the face of the tube. One end of each wire originates on the inside of the tube with the other end terminating on the outside face (Figure 1). In operation the beam from the electron gun scans the inside ends of the wires and deposits negative charges according to a pattern determined by the image being transmitted from the originating unit. Charges deposited in this manner are conducted through the separate wires to the outside face of the tube.

The final phase is the printing process in which the latent electrostatic image on the face of the tube is transferred to a paper surface and converted to a visual image and fixed to provide permanency (Figure 2). Paper is brought into contact with the face of the tube.

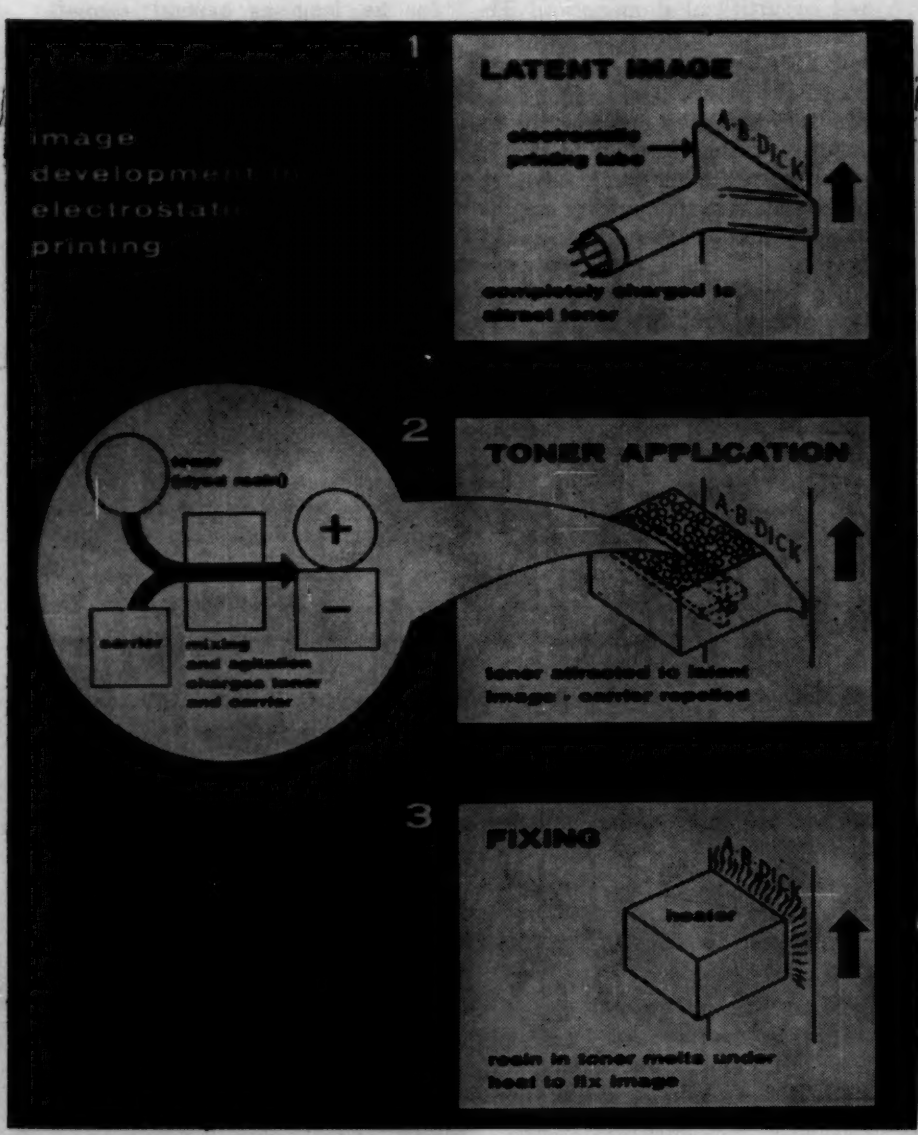
This allows the matrix to transfer the electrostatic or charged pattern to the surface of the sheet. The paper is then subjected to an application of positively charged, black-dyed resin powder. These minute particles adhere to areas having negative charges according to the pattern transferred from the face of the tube. From here the paper



basic principle of electrostatic printing with matrix type cathode ray tube

is heated to melt the resin particles to form permanent black images.

Detailed information concerning this process may be obtained by addressing Mr. S. V. Bol, Applications Engineer, Videograph Products, A. B. Dick Company, 5700 West Touhy Avenue, Chicago 31, Illinois.



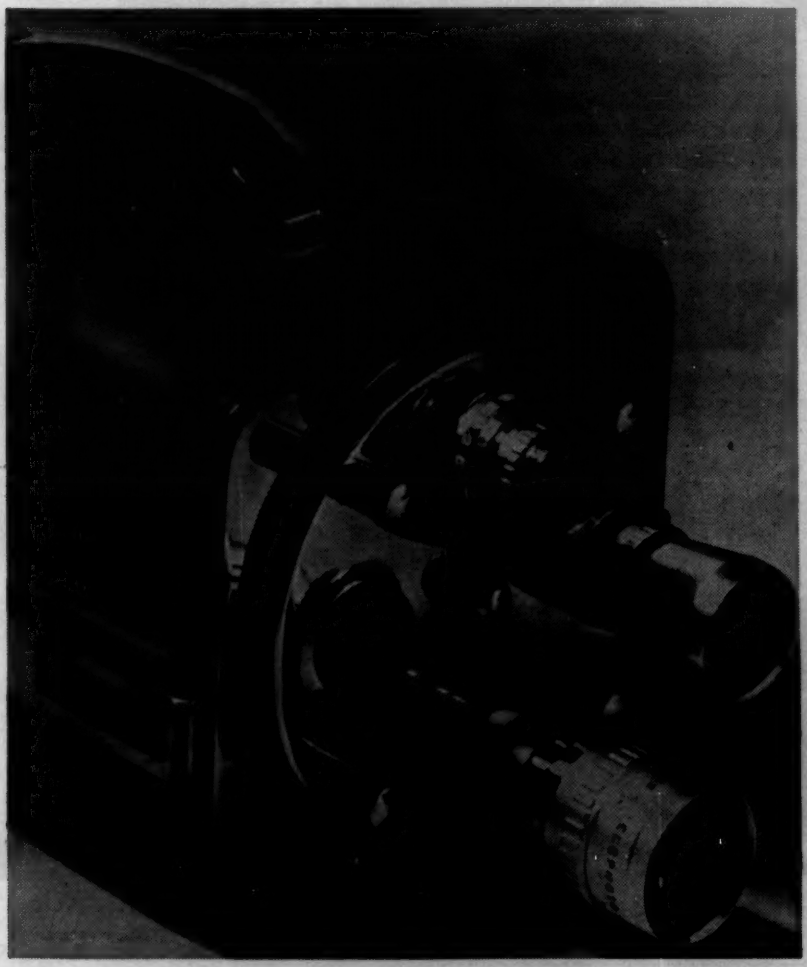
NEW SUPERSENSITIVE TELEVISION CAMERA TUBE

The dark is light enough for a new camera tube to pick up clear pictures without the aid of infrared or artificial illumination. The General Electric tube, known as a low-light-level image orthicon, is identical in size and shape to a standard broadcast image orthicon. It can produce intelligible, bright pictures on a television receiver of objects in areas too dark for the human eye to see anything. G. E. engineers say the tube is twenty times more sensitive than others of its type under standard operation, and up to a hundred times more sensitive when used with a special camera. It is capable of operating over a range from full sunlight to almost pitch darkness. The tube is able to transmit pictures directly to a receiver at standard frame rates, or to store up images for as long as several seconds to intensify their clarity and detail, and then to "sweep" them across the viewing screen. Now being widely tested by the Army and Air Force for military applications, the General Electric tube is also expected to have wide applications in closed-circuit television systems.

Figure 3 illustrates the image taken of a model under conditions of normal illumination as shown on the monitor screen. The inset in the upper left corner is an image reproduced with *all* lights turned off in the studio.

$595 VIDICON TELEVISION CAMERA

A new TV camera designed to bring closed-circuit television opportunities within the financial limits of school systems and colleges and universities has been introduced by Argus Cameras, a Division of Sylvania Electric Products, Inc. Exclusive of lens, the camera measures twelve inches long, seven inches wide, and six inches high. It weighs approximately sixteen pounds, accommodates all controls on the camera and will transmit images on any channel from two to six (Figure 4).



Some Benefits and Problems of School Television

Director discusses Philadelphia's experiences in educational TV

By **Martha A. Gable**

Taken from an address before the American Association of School Administrators, Atlantic City, New Jersey, February, 1959. Miss Gable has been in educational television since 1941. Currently she is director of the radio and TV education division of the Philadelphia Public Schools, and chairman of radio-TV for both the Philadelphia Federation of Women's Clubs and the Philadelphia Home and School Council.

As one who has been actively involved with educational TV for eleven years in a large city school system, I should like to report a few observations which I believe are significant. However, experimentation is still in progress; the search for answers continues.

I am going to mention briefly four aspects of school TV: supplementary and enrichment, major content taught by TV in large classes, major content taught by TV in regular-sized classes, and teacher training.

SUPPLEMENTARY AND ENRICHMENT

First of all, let me emphasize that the successful use of TV in a school or a school system requires advance orientation of administrators, parents, citizens, teachers, and pupils. In other words, a receptive climate needs to be created. In addition, the involvement of the TV

teachers, the classroom teachers who receive the programs with the children, and the curriculum subject specialists who write courses of study—involvement of all of them is of prime importance, if there is to be general acceptance of the TV lessons. This may be done in regular planning meetings or in workshops.

During the past ten years we have experimented with nearly every subject in the curriculum. Programs are presented daily, but each subject series is presented once a week over commercial stations. At first we limited our efforts to those subjects which required specialized skills, such as art, music, science, and health, in the self-contained classroom of the elementary school, where the teacher is responsible for all subjects. Later we offered advanced science, fine arts, literature, and vocational guidance to enrich and supplement classroom offerings at the secondary school level.

Teachers, supervisors, principals, and parents began to see the value of the TV lessons; the audiences grew. Parents saw the programs at home, approved, and purchased $275,000 worth of sets during those ten years. Requests from teachers began for lessons in social studies, government, language arts, reading, home economics, vocational guidance — we tried them all. Each one was well received because of the value of bringing outstanding teachers, plus valuable and unusual resource personnel and materials, to the classroom.

This type of classroom TV has been generally successful throughout the country both in motivating children and in upgrading teaching. Bringing the rich resources of the community to the classroom has proved to be acceptable to most school systems in any area. Such lessons do not seriously involve the differences of philosophy which sometimes exist among school systems in the teaching of basic curricula. This comes into sharper focus in the planning of major content courses for TV.

As time on commercial stations became less available, an educational station was established—WHYY-TV in Philadelphia. As our station was in process, experimentation began in other cities, on the teaching of major content of courses by TV, in regular-sized classrooms, with classroom teachers present. Pittsburgh, St. Louis, and Hagerstown, Maryland, conducted such experiments. Dr. Brish, superintendent of schools at Hagerstown, has reported his results in detail. Two main points are repeated here: that pupils achieve as well or better when they are taught by TV; and that TV lessons free the classroom teacher from preparing in detail the material taught by TV, so that she can spend more time preparing those lessons for which she is responsible.

TV TEACHING IN LARGE CLASSES

In 1957, in addition to the daily supplementary lessons presented on Station WFIL, the teaching of major content of courses

was undertaken in large classes in cooperation with the national experiment sponsored by the Fund for the Advancement of Education. [See Fact Sheet Series I, No. 77, this issue, for a digest of a report on the second year of this experiment.]

Class size ranged from 150 to 300, usually with two teachers. In some cases, one teacher was designated as the follow-up teacher while the other assisted. Sometimes the teachers alternated. In some cases, the assistant was a teacher of another subject. TV teachers taught one period per day.

Nine schools were in the experiment last year. This year there are fifteen. In response to requests from teachers, TV lessons were reduced from four to three per week, with two periods in regular-sized classes, to allow for laboratory work and testing.

A teamwork approach to teaching evolved, in which TV teachers, classroom teachers, principals, and curriculum assistants met in a summer workshop to plan content and sequence of TV lessons, teacher guides, and pupil worksheets. Techniques for teaching in the large classes before and after the telecasts were developed. For instance, we learned among other things:

1. Blackboards or overhead projectors are important so that the teacher has a visual device which all pupils can see.

2. Voice projection has to be developed, so that discussions may be conducted.

3. The classroom teacher does not reteach the TV lesson, but asks strategic questions to determine pupil needs in the follow-up, and goes on from there.

4. To work out a combination of evaluation devices which require a minimum of time—such as quick multiple-answer tests, recitation, and homework assignments.

Many schools, in addition to those in the large-class experiment, used the TV lessons voluntarily in regular-sized classes including public, private, and parochial schools in suburban areas, southern New Jersey, and northern Delaware. The Board of Education in 1957 purchased 250 receivers to supplement those purchased by parents, so that every school now has at least one 21-inch console model. The Board also undertook all installation, conversion to UHF, and maintenance. This stimulated further parent association purchases at the rate of about $5,000 per year.

TV TEACHING OF MAJOR CONTENT IN REGULAR CLASSES

In addition to those in the experiment, many schools both in and out of the Philadelphia Schools are using the major content programs as well as the supplementary series. At the junior high school level, where there are more classes in math and science than there are experienced teachers at present, some principals scheduled classes in these subjects to coincide with the telecasts. In increasing numbers, teachers

themselves are suggesting such scheduling to permit them to use the programs with their pupils. We have not had time to evaluate scientifically this utilization of the programs. Teacher and pupil reports are favorable.

Fourth- and fifth-grade conversational French has been taught during the past two years under the sponsorship of the University of Pennsylvania, five days a week, for fifteen minutes a day. Teachers in the classrooms do not know the language.

The response has been favorable. However, a number of questions have been raised. In view of a practically non-existent supply of foreign language teachers for elementary schools, how effective is the TV teaching, when there can be very little follow-up with emphasis on correct accent?

Are we prepared to continue the foreign language teaching, unbroken, through junior and senior high school?

Is TV teaching of foreign language in elementary schools perhaps a stimulus for more children to choose foreign language in secondary school? If so, perhaps offering several foreign languages by TV to elementary school children may help guide them when each later chooses a language.

This is a fertile field for research.

A State Educational TV Committee was set up by the Superintendent of Public Instruction to determine the needs and possible availability of educational TV in areas where no educational TV stations exist. It was found that superintendents are ready to utilize programs. Commercial stations were asked to donate time. Last year, kinescope recordings of science for fifth and sixth grades, from WQED, Pittsburgh, and the Pittsburgh Public Schools, were presented on a Lancaster station for the benefit of forty-two school systems in the area. Additional recordings are in process for use on commercial stations throughout the state in the future.

TEACHER TRAINING

An in-service course in elementary Russian was undertaken last term for teachers. It was presented after school, once a week. Teachers, pupils, and parents were invited to utilize it. Groups were organized in the schools on a voluntary basis. The idea proved to be successful; the program is continuing.

This term, an in-service course in science, for elementary school teachers, is being presented by the curriculum supervisor of science. Teachers meet after school to receive the telecasts. Discussion and experimentation follow, along lines indicated on the telecast. Teachers are asked to have certain materials available. One in-service credit may be earned toward salary status. More than 600 teachers throughout the city are taking advantage of this opportunity for training without the necessity of spending time and money in travel.

Additional courses are contemplated for after school and probably on Saturday mornings, when the lessons will be viewed at home.

SOME IMPORTANT QUESTIONS

1. How can the supplementary type of TV teaching be combined with that of major course content to effect the best possible service to pupils?

2. Are there some subjects where total teaching of a given subject can be by TV and in the large-class follow-up? And, are there other subjects where the large-class pattern should be combined with teaching in regular-sized classes? Such as four days per week of TV and one day in regular class? Or other combinations of time? Subjects where laboratory work is important are a case in point.

3. Is there a limit on the number of periods per week a pupil should receive TV teaching during a given term? Or throughout his school career?

4. Should the extra time, energy, and talent required of the TV teacher, and large-class teachers be recognized by extra financial remuneration?

5. How can evaluation procedures be evolved which will determine the effectiveness of TV teaching and learning, as measured against desired goals of achievement in education, 1959?

GENERAL OBSERVATIONS

1. The use of TV will not replace teachers. There will never be a sufficient number of *good* teachers. There will be acute shortages during the next few years which no amount of money can remedy. TV presents a means of bringing the gifted teachers to many pupils. It is urgent that educators find ways to use the medium to the best possible advantage.

2. Supplementary and enrichment TV lessons remain important in the total TV service.

3. If some subjects can be taught successfully by TV in large classes, and we believe that they can, it becomes important to study the integration of the TV organization with that of the entire school. Personnel and facilities are released which may be utilized for additional special services and/or a lower pupil-teacher ratio in some classes. If this experiment is successful to any degree, the possibility presents itself for a redeployment of available personnel and facilities for more effective use.

4. The classroom teacher responsible for a large or regular-sized viewing class is a crucial entity in the success of educational TV in the classroom.

5. The teamwork approach to teaching, so important in TV instruction, is re-emphasizing a cooperative procedure in curriculum building and methodology, always recommended but frequently neglected in educational practice.

6. The use of TV in education is not a cheaper form of education. When it is used to provide better and extra services, with superior

teaching materials combined with the most effective use of personnel, it is not less expensive. Any improvement of service in the past has cost money. The same is true of TV. The claim that it will save money in most school systems is misleading.

7. Comparisons of TV teaching with traditional teaching frequently are made with assumptions of ideal conditions in the latter. Rather, the comparisons should be made with conditions as they exist in many schools throughout the country.

8. The National Education Association. through its department of Audio-Visual Instruction is publishing a report on Interaction in Learning—Its Implications for TV. This stresses the great need for the production of telecasts which stimulate response and action, both mental and physical, on the part of the viewers. It underlines the lesser values of telecasts which require only passive acceptance.

9. The use of videotape recording opens exciting new uses of the medium. Programs can be telecast, recorded, and re-telecast several times on the same day to fit school schedules. In the planning stage is a small and less expensive videotape recorder which will permit teachers individually to utilize copies of TV tape recordings through their TV sets at any time convenient to them. This will revolutionize audio-visual education as copies of programs, with high fidelity, will be available immediately after recording to stations, to schools, to homes, by a machine no more complicated nor expensive than the tape recorders now in use.

10. The use of TV for in-service teacher training opens the way to quick, efficient dissemination of content, methods, new courses of study, and procedures to large numbers of teachers, conveniently, with top-flight instruction and materials.

11. It is important that teacher training institutions prepare teachers of the future to understand the techniques of utilization of this new medium, both for themselves and for the pupils they will teach.

12. Because of the increased use of TV teaching throughout the country, the research program made possible under Title VII of the National Defense Education Act becomes extremely important, along with other research projects. The Fund for the Advancement of Education is placing special emphasis on evaluation of its experiments this and next year. It is imperative that we find answers which will guide us in shaping the destiny of TV education.

Recently, Dr. Crawford H. Greenewalt, President of DuPont, said: "The role of the truly uncommon man is unique in any age. In any group of people, there will be those who lead and those who follow, those who succeed conspicuously and those who succeed not at all. The gifted individual contributes in an extraordinary degree, a degree which the current emphasis on group effort tends to

minimize and perhaps to obscure .... Yet it was not the uncommon man, but the common man whom the founding fathers saw as the focal point of their deliberations .... The essential difference between the world's two great powers fundamentally is one of philosophical outlook. If the percentage of uncommon talent in each is comparable, then the victory ultimately must go to that which produces the most from its common men."

Perhaps one of the great contributions of TV is its making possible the sharing of talents of uncommon men to make common men uncommon.

In closing, let it be repeated that the future of educational TV in America, its development and use, is in the hands of educators. Their l e a d e r s h i p in experimentation, their recognition of its potential, the advantages and limitations to be considered, are crucial.

May their guidance be both wise and creative as we face the challenge of change.

Above: J. Howard Lumpkin bids "adios" to Mexican flyers who came to the U. of Texas campus as participants in the "Know Your Neighbor" radio series. Below: Latin-American students discuss education and student life in a radio broadcast produced for the Voice of America. Clockwise from Moderator Winston Bode are Albino Fantini, U. S.; Gérman Amador, Colombia; José Luis Roca, Bolivia; and Rafael Garavita, Guatemala.

Our Radio Opportunities in Latin America

Nations south of our border are ready for education by radio

That there exist in Latin America countless unrealized opportunities for education by radio is FACT . . . but fact obscured by a nimbus of shopworn thought and reference.

We have looked at the climate of that fact for so long . . . we have heard it referred to and referred to it ourselves with such glib repetition . . . that it has almost ceased to have any significance whatever for us. Certainly it is lacking in emotional "smack." "*Amigos del Sur*—Our Friends to the South." "Hands Across the Rio Grande." "Hemispheric Understanding." Do you feel anything? Very likely not. The whole prospect tends to fade out into dull, meaningless gray . . . or to disappear entirely from consciousness, like the letter on the mantel we meant to mail a week ago. We have gone blind to the contours before ever doing anything really constructive about the contents.

About opportunities for educational broadcasting in Latin Amer-

By **Marye D. Benjamin**

Script editor for Radio/Television at the University of Texas. She has seventeen years of experience in educational broadcasting — and has been working with Latin-American broadcasts now and then throughout that time. She is a free-lance writer for magazines and advertising agencies, and was researcher and writer for four NAEB grant-in-aid series. She received a special citation from the President of the United States for a radio series on rehabilitation of returning veterans of World War II.

ica—as about so many other opportunities in Latin America—we need to sharpen our focus . . . change our lens . . . move in close for a really fresh scrutiny of some concentrated, finite facts.

The first thing we see are the ears. At this range, the impression is that Latin America is all ears. This is more nearly true than not. Take Mexico, for example. There we have a "Revolution by newscast"! So we are told by Marvin Alisky, chairman of the Department of Mass Communications at Arizona State University, who has devoted long-lived and competent energies to the study of broadcasting in Mexico and other parts of Latin America. Spotting through Dr. Alisky's 1953 article in *Quill*, we discover that this revolution is part of "an important communications story south of the border. But the revolution is not a military struggle; rather, a series of successful social reforms. And the newscast is not the type most United States stations air." And, we are told, "A look at Mexico itself will explain why."

Dr. Alisky helps us look. "Mexico has made great strides during the past thirty years. Yet our southern neighbor still lacks enough newspapers, roads, telephones, and other means of communications to realize full-scale national integration. THE ONE MEDIUM THAT REACHES INTO HERETOFORE ISOLATED POPULATION GROUPS IS THE RADIO BROADCAST, INCLUDING THE NEWSCAST.

"Mexico is a nation of rural life. Although industrialization is pushed jointly by the government and by private enterprise, it will be years before a majority of the Mexican people no longer live in tiny villages and earn their living from the land. Yet this agricultural nation is plagued with adverse terrain.

"New rural schools and public reading centers for adults, coordinated into the federal program against illiteracy, have increased readership. But almost one third of the nation still cannot read, a fact which enhances the impact of Mexican radio . . . . Many who are classified as literate live in isolated villages which have no regular delivery of newspapers or magazines. Only the radio waves can skip over the roadless mountains and into such villages with daily news of the outside world."

Thus we leave television to the people of Mexico City . . . grouped for viewing in bars, at store windows, and in lecture halls. We go west into the town of Quiroga in the state of Michoacan . . . where the merchants of Quiroga turn their radios up full volume for customers and passers-by . . . where the arts and crafts shops "keep radio blaring away, just as some U. S. factories employ wired music to step up production."

Or we stop for directions at a little hut on the outskirts of Cadereyta. There is no newspaper or periodical in this house, but the *madama* proudly points to a radio resting on a chair in the center

of the living-room-bedroom. Station XEFB in Monterrey is coming in with such volume that we can scarcely hear the directions we came for. And if the news is a bit delayed in coming . . . *Que cual?* . . . It comes!

We can go farther south than Mexico lies . . . to Tegucigalpa in Honduras. Walk to or from the cathedral . . . cross the plaza to some of the largest stores and offices. We are automatically within earshot of HRN, the Honduran radio station with the most favored position. No . . . not on the dial. On the main square in the heart of this Central American capital city. Speakers keep the plaza reverberating with radio programs at all hours. Independent and nonpolitical outlet HRN may be, but it somehow manages to remain the only Honduran radio station with permission to hook its microphones to loudspeakers in the center of town.

Guatemala must keep its ears alert, for eighty per cent of its people are illiterate . . . yet there is only one radio receiver for each forty citizens. To these three million people their twenty-three radio links with the world are essential, if they are to be linked with the world at all. Except for a tiny upper class, only the exceptional literates have gone so far as the sixth grade. Most bowed out at the second or third.

Not only illiteracy pricks up the ears, however. Costa Rica, with the third highest reading skills in all the Latin-American republics, has two dozen radio stations in its capital alone. Radio is as much a fetish as education, and the country has long boasted that it has no army because it spends a major portion of its annual budget on education. This means that when invaded, as it was in January of 1955, Costa Rica had tens of thousands of schoolteachers to defend her liberty, but no soldiers. But it also means that the country is . . . as we say in East Texas . . . "right ripe for adoption" by those interested in educational exchange.

When we are close enough to see the ears of Latin America, the boundary lines leap into major prominence. And we are reminded that "communication is not synonymous with social cohesion."

Just call the roll of Latin-American nations . . . there are twenty of them . . . and you see that right away. Haiti is Negro; Guatemala is Indian; Argentina is white. Costa Rica has a democracy, while next-door Nicaragua has a dictatorship. Paraguay is primitive and Uruguay is very progressive. Brazilians speak Portuguese and Haitians speak French. The other eighteen countries do speak Spanish, yet millions of Indians still talk only their own native tongues.

And if we look close to home, at a less cumbersome, more compact example . . . Mexico . . . we find the Indians a very powerful factor in any educational-broadcast thinking we may do. Mexico may say to the United States, as it did say in one "Guardians of Freedom" program: "In your melting

pot, you have melted away your Indian. Scarcely a trace of him remains, even as flavor. But we have no melting pot. Our people are not melted. They are woven of three separate and distinct major threads. One of those threads is Indian."

Mexico can point out yet other diversities. In his collection of essays, *The Labyrinth of Solitude,* Octavio Paz (poet of Mexico, essayist, critic, playwright, and statesman—and, according to *The Texas Quarterly,* "probably the most sensitive, sympathetic, and perspicacious student of the Mexican character now writing") reminds us: "In Mexico there exist together not only many different races and dialects, but also many historic strata. Some live in prehistory . . . others . . . exist outside history . . . . Different epochs confront each other, ignore or devour each other, in the same spot or separated by only a few kilometers. Sharing the same sky, with completely different heroes, customs, calendars, and ethics, live Catholics of the time of Peter the Hermit, and Jacobins of the Tertiary Era. None of the old epochs ever disappear entirely, and the most ancient wounds still bleed. Sometimes like the pre-Columbian pyramids which almost always hide earlier ones, alien or warring ideas and feelings merge or straddle each other in a single city or psyche."

Thus, you see, we begin to lose the clarity of our close, sharp scrutiny when we extend our focus to think or plan in terms of Latin America as a whole. We had this underscored by Latin-American students at The University of Texas who were participating in a radio series called "Yo Creo Que" ("I Believe That . . . "), which the radio-TV department recently produced for the Voice of America. To the director, who asked him to discuss the differences in family life in this country and Latin America, a student from Costa Rica answered: "I prefer to speak only about family life in Costa Rica. If people from Ecuador, or Colombia, or Bolivia, or Mexico, for example, hear me . . . they will say, 'Why is he telling about our country? Why doesn't he tell about his own country which he knows something about?' " As a refinement of this feeling, students from Monterrey insisted on hewing only to matters of northern Mexico, saying that they did not really know enough about central and southern Mexico to go on record with factual statements about those sections of their country.

The closer we approach, the larger and clearer loom the opportunities in Latin America. Here are people rich in the coin of ancient cultures, fixed in a listening posture. They stand, millions of them, on the tiny farms of their ancestors, listening for the sounds that will mean more productive ways of working, better crops, better ways of living. Countless others strain to catch the clangor of industrial progress or the echoes of educational advancement. They have learned since the Revolution of 1910 that social reforms

can often come best to them through their ears. But they listen for different languages, for facts offered at different levels of comprehension, for messages specially packaged to fit their own understandings, their own experience, their own unique needs.

In our present-day approach to education by radio as it pertains to Latin America, we come not as strangers, but certainly as comparative novices. It is true that we have experienced first-hand participation in educational broadcasts intended for exchange between our country and some country or countries of Latin America. For a number of years radio at The University of Texas concerned itself with continuous experimentation in Latin-American broadcasts, both in Spanish and English. The initial venture of Radio House into the field of Latin-American relations (underwritten by the University's Institute of Latin-American Studies, and endorsed by The State Department in Washington and the Mexican Ministry of Foreign Affairs) converted travel research in Mexico into eight weeks of an experimental broadcast series, "Know Your Neighbor." For those eight weeks in the summer of 1941, three weekly broadcasts (one commentary and one dramatic program in English, one commentary in Spanish) were transmitted over Station WOAI in San Antonio. Voluntary letters from listeners in the States revealed that "Know Your Neighbor" was heard in states as far away as Indiana, Colorado, and Mississippi. The 50,000-watt clear-channel voice of WOAI had ample power to cover all of Central America and is known to have carried its message to Villa Hermosa, Mexico, only a few miles from Guatemala.

Before the series was over, its success was assured, and the script-writer was on her way back to Mexico and Central America for intensive travel and research that produced a new series of thirteen programs, "Guardians of Freedom." Carrying the approval of our own State Department and the governments of all the Central American countries, "Guardians of Freedom" drew fan mail from forty-four states of the Union, twenty states in Mexico, three provinces in Canada, the nations of Central America, Puerto Rico, and the Canal Zone. Included in these letters were messages of praise and appreciation from the presidents of most of the countries south of the border.

Plans and hopes for further experimentation in educational broadcast exchange with Latin America faded away in the exigencies of World War II, but educational broadcasts for Latin Americans in Texas went on. Sponsored by the Executive Committee on Inter-American Relations in Texas, of The University of Texas, two series in Spanish—"The Call of Liberty" and "The Call of Friendship"—were broadcast in the summer and fall of 1943, helping Latin Americans adjust to new roles of citizenship in wartime central Texas.

Other projects, some quite

ambitious, have been envisioned . . . spelled out in presentation . . . discussed . . . explored . . . considered. Some died at birth. Others perished in committee. Still others, at the hardy stripling stage, suffocated from lack of available funds.

Within the last few months, eight 30-minute programs were produced for the Voice of America by Radio/Television at The University of Texas. Participating in these programs were students enrolled at the University from Colombia, Cuba, Costa Rica, Ecuador, Mexico, Bolivia, and Venezuela. They discussed for broadcast in their own and other Latin-American countries such topics as "The Student and International Understanding," "Students and Leisure Time," "Student Government," "Courses of Study," and "The Student Looks at the Family."

To these extents we have essayed forays into the expanse of educational broadcast opportunities which Latin America represents. But we cannot presume to claim that they have vested us with any extensive knowledge concerning educational broadcasting with a Latin-American flavor. The plain truth is that very little *is* known, in an organized, definitive way . . . in the way that permits one to say "I know" rather than "I have been led to believe" or "It would seem to me" or "I would imagine."

There are beacon lights along the way . . . signs and symbols indicative of cooperation as a sort of "lanolin base" for the opportunities that exist.

The 1953 Ph.D. dissertation of Marvin Alisky, "Educational Aspects of Broadcasting in Mexico, clearly indicates that educational broadcasting is acceptable to Mexican audiences, but it also shows that the number of educational stations per se is diminishing. The "why" of this is complicated and, like almost everything else in Mexico, is linked to the aims of The Revolution. Despite this, there is good reason to believe that Mexican commercial stations would cooperate in broadcasting educational radio programs prepared in this country.

From a memorandum prepared by Dr. Antonio Castro-Leal, Director of the Summer School, National Autonomous University of Mexico, we learn that a series of educational radio programs could be broadcast over XEUN (the educational station operated by the National Autonomous University) and could be made available to Mexican commercial radio stations. This memo came from Dr. Castro-Leal while he was on The University of Texas campus last summer. Conversations with him revealed that he considers relations between XEUN and commercial stations in the Mexico City area to be cordial.

Other strong evidence that Mexican audiences react favorably to programs of educational content is proffered in two books by Armando De Maria y Campos, *News Before the Microphone* and *The Theatre on the Air,* dealing more or less with a historical summary of radio news and

drama, with emphasis on their educational aspects from the Mexican point of view.

We have also the favorable opinion of Mr. Joe Belden of the Belden Survey Associates, a public-opinion gathering organization with main offices in Dallas, Texas, Monterrey, Mexico, and Mexico, D. F. A Mexican national who is now a citizen of this country, Mr. Belden believes that Mexican broadcasters would welcome broadcasts produced by educational institutions in the United States, provided the producers would confer with Mexican broadcasters or Mexican educational institutions when planning the programs. His point here is not that the Mexican representatives would want to dictate content, but rather that they have valuable advice concerning the types of programs acceptable to the Mexican audience.

Reaction to the Voice of America series encourages further radio broadcast activities in this direction.

It would seem, then, that the opportunities for education by radio in Latin America and for educational exchange between those countries and ours are undeniably present and potentially extensive. But to say to ourselves merely that Latin America holds such vast, tantalizing, and unexploited opportunities is like saying to a "greenhorn" fisherman that the Pacific Ocean holds outsized, exciting, and uncaught marine game. Even if it is possible to be fairly specific about the nature of that game . . . to say, for example, that it is most likely whales . . . this is of little help until the fisherman acquires some working knowledge of how to approach a whale, how to catch it when he has approached, and what to do with it after he gets it. The same holds true for the educational broadcasting opportunity-seeker in Latin America, because opportunities in and with Latin America for education by radio, however numerous and compelling, DO demand a specialized approach . . . ARE difficult to apprehend . . . and WILL need knowledgeable implementation once they are in hand.

There are great arid stretches of no information. Published material relevant to the subject is unbelievably sparse. The librarian of the Latin-American Collection at The University of Texas reports only twelve cards on "Radio" in a card file cataloguing one of the richest veins of Latin-American source materials in existence. And these twelve, when explored, offer "mighty slim pickin's."

Attempts at exploration or research by correspondence induce a frustration approaching madness. The conviction abounds among those who know Latin America best that "educational broadcasting" between these two segments of America is and must be a two-way street. Equally strong is the conviction that this street will never be paved with letters. Whatever the reason . . . and there are various explanations offered . . . answers to mail requesting information are not forthcoming.

Information can be had . . . readily and courteously and even enthusiastically tendered . . . but it must be garnered there . . . on the spot . . . where the people are. Those of us who would know more about international education as it touches on Latin America must seek that knowledge among the people of Latin America in special and limited places.

This is one of the most significant insights vouchsafed to us concerning interchange of education by radio with the people of Mexico, of Central America, of South America. Fealty to its precepts leads to other useful specific awarenesses: that the Mexican has a great deal of pride in his country and his heritage, and thus programs designed to show that we in this country recognize the importance of Mexico's gifts in various fields would have considerable value . . . that the Mexican people are attracted by conflict in a discussion . . . that they favor drama with a strong emotional appeal . . . that they have a strong feeling about the "manifest destiny" of Mexico and all the Americas . . . that Mexicans feel their own scholarly tradition is superior to that of the United States . . . that the people of Mexico have a keen interest in economics.

Education by radio between Anglo America and Latin America must take its vital cues from just such insights. It cannot look for its substance and sustenance to the desk chair or the reference shelf. Research by travel is imperative.

Opportunities in educational broadcasting for the United States and the Latin-American countries, considered in a multiple sense, appear to lie on the other side of one big primary opportunity. That is the opportunity held out to these countries to clarify the image of each for the others. It would be a signal contribution to both countries, for instance, to expunge the caricatured stereotype that "Mexican" conjures up in the minds and emotions of the United States and the one that "Americano del Norte" projects on the minds and emotions of Mexico.

This would be a considerable improvement over the tips-and-trinkets relationship which does such a disservice to both national characters. Lucidity is a far better exchange than cupidity. And even if, in the images which would emerge, there should be aspects which prove nettlesome, features which defy wholehearted acceptance . . . even if "to know" is not necessarily "to love" . . . then at least, in our comings-together, we should be dealing with the "real" rather than the "fantasied" . . . with the valid character, personal or national, with its actual attributes, its genuine shortcomings, its essences neither magnified nor pulled askew.

Then what each could teach the other or what each could learn from the other would be more readily ascertainable. What each proposed to offer the other or to ask from the other in the way of education by radio would be far more likely to prove itself of value and efficacy.

Does the Label Make a Difference?

Audiences are tested for reactions to CBS versus NET identifications

In recent years there has been an increasing interest in what is termed "educational television." At present, there are more than one hundred educational institutions working within the area of television. Yet, in the United States today, there are only 43 educational television stations on the air, as compared with 511 commercial stations. Because of this, American television viewers seem basically conditioned to viewing television as an entertainment medium. They are equally conditioned to it as a business enterprise being presented by commercial interests.

The question now arises as to audience reaction towards programing termed "educational." In contrast with programing of alleged commercial origin, would an audience of college students react differently—either positively or negatively—towards any television program of apparent noncommercial origin, or would it view and evaluate all programs objectively, without regard to source?

By **Donald W. Knoepfler**

Assistant Professor, University of North Carolina (Department of Radio, Television and Motion Pictures), and Director of Station WUNC. He teaches graduate and undergraduate courses in both radio and television.

The problem as examined by this author was of a threefold nature:

1. Does college students' retention of information contained in a television program alleged to be of commercial origin differ significantly from the retention of information contained in the same television program alleged to be of educational origin?

2. Does college students' interest in a given television program alleged to be of commercial origin differ significantly from interest in the same television program when alleged to be of educational origin?

3. Is there a correlation between *retention of information* as evidenced by test scores and the *interest* indicated by college students for an educational television program?

Little previous research had been undertaken in the area of this particular study. Some partially related studies existed, however, particularly those dealing with auto-motivational factors. Their findings, taken collectively, gave some premise on which to base this investigation. These studies tended primarily to be examination of the influence of a source variable upon source credibility, learning, and related motivational elements.

PROCEDURE

Two film programs were chosen for the experiment, one on the short story, *Writers of Today*, and one on opera, *Spotlight on Opera*. For the purpose of varying the apparent educational or commercial origin, sets of educational and commercial program credits were obtained and used in the experiment. The educational credits consisted of a visual "N-E-T" film identification, accompanied by an off-camera announcer who said "This is National Educational Television." The commercial credits on film were loaned for purposes of the experiment by the Columbia Broadcasting System. They consisted of a CBS visual identification, accompanied by an off-camera announcer who said "This is the CBS Television Network."

General information was selected from the film programs and two tests, one for each program, were constructed from this information. Pre-testing was done to eliminate items which failed to discriminate between the learner and non-learner. The tests were administered to two groups: (1) Communication Skills classes at The State University of Iowa, and (2) a panel of three staff members who had been asked to become familiar with the above information through two viewings of each program. Questions were eliminated if they were answered correctly by more than forty per cent of the students, or if not answered correctly by all of the staff members. Twenty-two test items which effectively discriminated between those who knew the information and those who did not were selected in this manner for each of the programs.

In addition, a series of questions was devised to compare interest by the individual subjects for educationally and commercially identified programs. With one exception, the same questions were asked of all subjects. The one exception was on the form given to those who had just seen a purported commercial program. For them, the first question referred to commercial programing. This was not used in the evaluation, but rather was intended to re-emphasize the apparent commercial origin of the film.

The experimental subjects were speech and communication students enrolled at the University. A total of seventy-eight students were used in the experiment, thirty-nine in each of two groups. In order to minimize order effect, these groups were divided into sub-groups. The division was determined by whether the student was enrolled in a communication or a speech course.

Each student saw both films, with a period of two days or more intervening between the two viewings. One group saw the short-story film, *Writers of Today*, with educational titles, and the opera film, *Spotlight on Opera*, with commercial titles. The second group saw the short-story film as a commercial program and the opera film as an educational program. The sub-groups were utilized within each group so that one sub-group saw the short-story program first, and the second sub-group of the same group saw the opera program first.

Upon completion of the viewing, each student was asked to complete the interest response questionnaire over the program just seen. This was followed by a multiple-choice test over the information presented.

Interest ratings were correlated with test scores. In addition, the test scores were subjected to an analysis of variance in order to discover whether the hypothesis of no difference was tenable. The five per cent confidence level was set as the level for rejection of the null hypothesis.

RESULTS

1. The analysis of variance indicated that there were no significant differences in retention from the programs whether they were presented as educational or commercial programs.

2. Reliabilities of the retention tests were .78 for opera and .73 for the short story.

3. The difference between mean interest ratings for the main groups were so small and inconsistent that no statistical analysis appeared to be necessary.

4. Interest in the content of the programs was nearly the same for all groups.

5. There was a significant positive relationship between interest in the programs and retention of information from the programs.

6. For the opera program there were significant positive correlations between interest and learning, regardless of alleged program origin.

7. For the short-story program there were significant positive correlations between interest and learning only when viewed with commercial credits. When this program was used with educational credits the correlations between interest and learning were nearly zero and nonsignificant.

The following conclusions seem valid:

- The fact that college students learn just as much from a filmed educational television program regardless of whether it has the appearance of being commercially or educationally produced seems to indicate that the program content is of much greater importance than apparent source.

- College students seem to be able to learn a great deal from a filmed television program, and to be interested in the content, even though they may rate the film low on production quality.

- It appears to be an anomaly that a positive significant correlation between interest and learning existed for the program on opera throughout the experiment, regardless of alleged program source, while the program on the short story demonstrated significant correlation only when it was viewed with alleged commercial credits—since the results clearly evidence a significant correlation between interest and learning for the study as a whole. It would appear that the insignificant correlation in the one instance could be due to chance.

The original hypothesis of no difference in interest and learning between programs of alleged educational origin and programs of alleged commercial origin seems, on the basis of this study, to be supported. However, further experimentation needs to be done under a "field" situation, since it is thought possible that the classroom situation in which the experiment was conducted might have tended to standardize subject attitude towards the two programs.

NAEB Research Fact Sheets

Series I: The Effectiveness of Television as a Teaching Tool

76. A Study of Certain Factors that Influence the Use of Radio Broadcasts and Recordings in Public School Classrooms

By Gale R. Adkins. The University of Kansas, Summer, 1959. 33 pages.

How do teachers feel about using radio broadcasts and sound recordings in the classroom? The purpose of this study was to investigate three factors which were expected to affect such usage:

1. Availability of certain items of audio equipment.
2. Teacher preferences regarding classroom use of radio broadcasts, tape recordings, and disc recordings.
3. Difficulties experienced in using radio in the classroom.

Postcard questionnaires were distributed in 1956-57 to 2,420 Texas public school teachers of grades 1 through 9. Except for cities having educational radio or TV stations, all Texas cities with populations over 50,000 were represented. Smaller towns were selected to give each section of the state proportional representation according to population.

The rate of return was 58.6%—for a total of 1,419 replies. The highest per cent of responses came from towns of 50,000 through 300,000 population.

In answer to the question, "Do you have available for use in your classroom: a radio, a tape recorder, a transcription player, a TV set?" 18% indicated that they had none of the items; 59% had radios; 70% tape recorders; 34% transcription players; and 6% TV receivers.

The second question was, "If you had the necessary equipment,

would you prefer having radio programs made available over a radio in your classroom; on tape recordings in your classroom; or on disc recordings in your classroom?" In response, 41% preferred tape recordings, 38% records or transcriptions, and 20% radio.

Last was a write-in question: "What have you found to be the greatest difficulty in using radio broadcasts as instructional materials?" Of the 1,287 who answered this question, 38% reported broadcast of programs at inconvenient times as the greatest problem, and 15% named the inability to preview, or to stop and then resume, or to re-run programs. A total of 16% reported difficulty in getting suitable programs—9% due to grade level, and 7% because of subject area. Some 21 different difficulties were mentioned, but only the above three were listed by as many as 10% of the teachers who responded.

In conclusion, the author points out that meaningful research is needed to investigate the teaching effectiveness of educational radio. He says that, although it has developed through the years because great numbers of educators have been convinced by experience that radio programs are useful teaching materials, educational radio has never experienced the concentrated research that educational television has.

NAEB Research Fact Sheets

Series IV: Audience Studies

28. The Group Interview as an Audience Reaction Measure

By Malcolm S. MacLean, Jr., and Hans H. Toch.
From the Audio-Visual Communication Review, *Summer, 1959, Vol. 7, No. 3. pp. 209-219.*

This is a description of a technique for obtaining audience reaction data by means of group interviews. Examples of its application to two educational television kinescopes are given also.

The writers say that group interview results may be more meaningful to the program producer/director than the results obtained from the usual extensive research. "Hearing a middle-aged grocer's wife say she simply could not get the point when the man in the picture was scraping the rock with his knife may suggest more to the TV or film man than a neat table of figures."

While working on a research project for the Educational Television and Radio Center at Michigan State University, the writers conducted group interviews with eight different social groups following their exposure to two programs. One program was a simple lecture dealing with history. The other was a lecture-discussion-demonstration type on the subject of making baby formula.

In conducting the interviews, a standard series of points was covered in every session—along with any other relevant points mentioned by anyone being interviewed. Opening question in every

interview was, "Now, what did you think of this last program?" After general impressions were explored, viewers were asked what they liked best and what they liked least.

Interviewees were asked to recall parts of the program they particularly liked and disliked. They were asked whether they thought they had gotten anything out of the program. And, "What did you think of the ———?" (the performer).

They were asked what would be the first thing they would do if it was their job to improve the program.

The group interviews were all recorded and transcribed. Some typical comments dealt with too much detail in the programs, too many facts at one time, bad camera work, the performer's knowledge of his subject, and suggestions that more visual aids should have been used.

It is apparent, say the authors, that this type of interview can be an important link between reaction measures and content analysis categories because it suggests *why* the audience likes or dislikes *what* it likes or dislikes. The writers also point out that, in spite of certain limitations, group interviews provide an inexpensive way of getting audience data; they yield human interest material that would appeal to people who are left cold by statistical tables; they highlight the qualitative aspects of results obtained through other assessment techniques; and they serve to bring the producer and his audience closer together than other research techniques.

NAEB Research Fact Sheets

Series I: The Effectiveness of Television as a Teaching Tool

77. Second Report of the National Experiment of Television Teaching in Large Classes

Sponsored by the Fund for the Advancement of Education of the Ford Foundation for the school year 1958-59. By Allen H. Wetter and Martha A. Gable, Philadelphia Public Schools. 15 pages.

This is a report on the second year of experimentation involving TV teaching in large classes in the Philadelphia Public Schools. (For the first year's report, see Series I, No. 49, of the Fact Sheets—which appeared in the November, 1958, *NAEB Journal.)*

During 1958-59, 15 schools participated, of which 8 took part during both years of experimentation.

PREPARATION

Preparation of teacher guides and pupil worksheets, content and continuity of TV lessons, and details of the teamwork approach to teaching were planned at a five-week workshop. TV teachers, classroom teachers, curriculum specialists, radio-TV assistants, principals and other administrators cooperated.

The series which were presented for the second year — social studies, science, biology — showed marked improvement in presentation: pace, use of resources, clarity, simplicity, focus, logical sequence.

TV teaching techniques to stimulate interaction by and among

pupils and teachers were emphasized. Questions were raised, followed by pauses, to permit responses; beginnings of TV lessons were planned to be thought-provoking and exciting in an effort to arouse attention and interest; lessons were closed with "open-end" devices to lead into follow-up discussions rather than closed with distracting announcements of future lessons.

Mathematics lessons were more difficult than any other subject presented on TV because of the need for clearly visible written work, the sequential factor in learning, the time needed for problem solving during the telecast, and provision for individual differences.

PRESENTATION

In classrooms, one teacher led the discussions; others distributed materials, answered individual questions, and repeated remarks that were not heard.

Teachers and pupils developed a variety of follow-up activities: pupil reports, pupil panels, quiz programs, and short dramatizations based on the telecasts. Pupil representatives occasionally appeared on the actual telecast—in quiz reviews, or armed with questions from their respective schools. TV teachers visited each school at least twice a term to meet the classes personally.

TV receivers were 21-inch console models with front speakers, mounted on box platforms four feet high, with rubber casters.

PURPOSE

The experiment was set up primarily to find out whether or not TV teaching in large classes with fewer teachers is effective, and whether the degree of success or failure varies with subjects. Evaluation was carried out in three ways —standardized tests, teacher-principal evaluation on a questionnaire, and "feedback" reports from teachers and pupils. The latter were sent in weekly from the schools.

FINDINGS

1. ELEMENTARY SCHOOL. Standardized tests indicated that pupils' achievement in TV classes was slightly better than in control classes in fifth-grade science and social studies. In language arts, achievement was slightly better in the control classes. Almost all teachers involved in the experiment reported that they thought TV pupils achieved the same or slightly better than might have been expected under the traditional arrangement.

Teachers were almost unanimous in the opinion that bright children were stimulated by the TV lessons to do more and better work. They thought average pupils achieved more because TV lessons are verbal and visual. There was some disagreement about slower pupils.

It seems that TV in large classes in elementary schools has been successful. There has been marked improvement of teaching techniques as a result of experience gained during the first year.

Teachers, parents, pupils, and principals accept the experiment as a matter of fact. Fears and tensions which were present during the first year have disappeared.

2. JUNIOR HIGH SCHOOL. Standardized tests in science indicated that TV pupils achieved slightly better than the control group. Science teachers in the experiment were almost unanimous in their approval of the TV lessons. They mentioned that pupils were challenged to read more, to undertake a wide variety of projects outside of school, to visit science institutes and laboratories, and to keep excellent notebooks and scrapbooks.

Tests in mathematics indicate that pupils in TV classes achieved slightly better in basic computational skills and in mathematics of the grade, while control groups were slightly better in arithmetical reasoning.

Teachers stated that pupils achieved about as well as they would have in standard classes. Some reported that their bright children were bored, some of the slow ones gave up, and the average pupils achieved very well. There was general agreement that achievement improved as teachers and pupils became accustomed to the large-class procedures. (This was the first year that math has been taught in the experiment.)

It is significant that most of the unfavorable responses from junior high teachers in both science and mathematics came from those where the large classes met in auditoriums. Lack of comfortable writing facilities is probably the greatest drawback. This emphasizes the need for proper large-class facilities for maximum returns from this type of teaching by TV.

3. SENIOR HIGH SCHOOL. Tests of the senior high biology students indicate that the TV classes achieved slightly above the control classes. Reports from teachers, parents, and pupils are almost completely favorable this year. Last year there was considerable pupil resistance to the program at first.

Probably the most marked change this year from the first year came from pupil reactions, which were mostly negative or noncommittal the first year. In a poll, unsigned, from one high school, 105 students said they would choose TV if given a choice of taking biology by TV or in regular classes. Only 18 chose regular classes, and 10 said they didn't care.

Results of tests in tenth-grade consumer mathematics rated pupil's achievement in TV classes slightly above that of regular classes in two tests: arithmetic reasoning and computation. (The content of this phase of mathematics lends itself to the use of visual materials more readily than that of the junior high course.)

SUMMARY HIGHLIGHTS

The majority of pupils learned as effectively through TV in large classes as through standard

classes. There was significant improvement in this in the second year of a TV class.

Time equivalent to eight and a half full-time teachers was saved during the year. This was used for advanced work with gifted pupils, remedial work with slow pupils, or for extra supervision. These additional services were made possible by the experiment.

Principals of seven schools not in the experiment have requested TV receivers so their schools will be able to get the TV classes next year.

There was agreement that very slow pupils, who do not concentrate and who are restless, should not be placed in large classes.

The study mentioned that in-service courses for teachers can offer tremendous possibilities for improvement of instruction. Courses in science, arithmetic, developmental reading, and Russian have been offered for this purpose.

NAEB Research Fact Sheets

Series VI: Impact

15. An Examination of the Differential Effects on Viewers of Experience in Taking Telecourses on Attitudes Toward Instruction by Television and the Social Psychological Impact of a Controversial Educational Television Program

By Richard I. Evans. University of Houston, July, 1959. 46 pages. (Supported in part by a grant-in-aid from the NETRC.)

This study was designed to measure the impact of a controversial program in terms of three things: What is the effect on a viewer's attitudes of a particular program? To what degree do the psychological tests, designed to measure attitudes, affect the response of the subjects to the program itself? What is the effect of previous experience in taking a telecourse on attitudes toward TV as an instructional medium?

Students enrolled in five sections of the introductory psychology course at the University of Houston were subjects for the investigation—and numbered about 160. These students were divided into five groups and given combinations of four social psychological tests.

Then the four experimental groups were shown the TV program via closed-circuit in specially designed viewing rooms. The half-hour program presented a classroom situation in which psychology instructors discussed with students the development and characteristics of racial and religious prejudice.

After the viewing, the four experimental groups as well as the control group—which had not seen the program—were tested again.

FINDINGS

1. As measured by immediate post-test of attitudes, the program caused unprejudiced viewers to engage in less intense name stereotyping, did not alter attitudes of prejudiced viewers, and in short fell far short of the apparent goals of the program.

2. Response-set (caused by pretesting which could cause "selective viewing" of a program) may not be operating when relatively indirect measures of attitudes are used.

3. Negative attitudes toward television instruction may be less the result of experience in taking telecourses than of such factors as poor course performance or general negative attitudes toward the idea of college courses or teaching methods. In other words, television instruction becomes an available "whipping post" (because of its novelty) for latent hostile attitudes arising from many other factors in the college course situation.

NAEB Research Fact Sheets

Series I: The Effectiveness of Television as a Teaching Tool

78. Teaching the Use of the Slide Rule Via Television

By Oakley J. Gordon, Edwin C. Nordquist, and Keith M. Engar. KUED, University of Utah, July, 1959. 19 pages. (An NAEB Grant-in-Aid Project.)

This study was designed to look for differences between students taking a course by TV and those taught in the conventional classroom—differences in other dimensions than course achievement. Use of the slide rule was chosen to be the course taught.

The same instructor who regularly taught the slide rule course on campus also prepared and taught the TV version. The TV course was inaugurated on KUED, Utah's VHF educational television channel, for the fall quarter of 1958-59. The course consisted of 20 half-hour lessons on TV and it required 19 exercises to be completed in a workbook. Credit students were required to go to the campus four times for written exams, including a final exam. The same final exam was given to the campus classroom students. However, their exercises and other quizzes differed from those of the TV students.

The TV classes were presented in the evenings as "live" productions. These sessions were kinescoped and shown twice again, once in the early morning and once at noon within three days of the original show. Times of these showings were listed in the daily and weekly programs of local newspapers.

Folowing are the five hypotheses the study investigated and the findings:

1. Regularly enrolled college students will learn as much about

using the slide rule from TV instructions only, as those who take the same course in the classroom.

Finding: Hypothesis once again confirmed. There was no difference in achievement between the two methods of presentation, TV vs. classroom.

2. Low-aptitude students studying the slide rule via TV will learn more than low-aptitude students studying the slide rule in the classroom.

Finding: High-aptitude students performed better under the TV instructions than in the classroom, while the low-aptitude students were better off under classroom instruction.

3. Off-campus enrollees (not regularly enrolled in the University) who take the TV course for credit will perform better than those off-campus enrollees who take the course but not for credit— and will perform more poorly than regularly enrolled college students taking the TV course for credit.

Finding: Hypothesis confirmed. This suggests that motivation may make for better learning in a TV course.

4. Differences between groups (e. g., TV vs. classroom, campus vs. off-campus, credit vs. non-credit) will be influenced by amount of reinforcement sought— i. e., number of times the student in each group repeats a lesson via kinescope recording on TV.

Finding: This hypothesis was not supported by the data. Apparently regular campus students took less advantage of repeated kinescopes than other groups. There was a distinct tendency for those who did more poorly in the course (regardless of method of presentation) to do more of this repeated viewing.

5. Differences between groups will be influenced by amount of time spent in studying for the course—as self-reported.

Finding: Hypothesis not confirmed. There are generally no significant correlations between amount of study reported by any student and the grades he received on either the final exam or the exercises completed for the course.

Televised Instruction or Instructional Television?

Production personnel play important role in TV instruction

By L. P. Greenhill

A speech prepared for the NAEB CCTV seminar at Pennsylvania State University, August, 1959. He is associate director of the Division of Academic Research and Services, Pennsylvania State University, University Park.

Are we engaged in televised instruction or instructional television? I have seen this question debated in several articles lately and in personal discussions. Some people are suggesting that "televised instruction" refers to the practice of presenting classroom instruction over television with little or no change, whereas "instructional television" involves the addition of the almost magical power of television to the process of teaching.

I do not propose to carry this semantic debate any further, rather it seems to me to lie in the realm of "hair-splitting." However, I would like to emphasize what seems to me to be the important facts of the situation. What we are concerned with is the presentation of high-quality instruction by means of television, at the same time adding whatever television can add in order to make this instruction as effective as possible in promoting learning.

Television can reach many people in widely scattered places simultaneously. This is the most obvious advantage of television, and perhaps in some ways its most

important. This has tremendous significance for education. It means, for example, that an outstanding teacher can be brought within the reach of an almost unlimited number of students in widely scattered locations, and can bring to these students teaching resources that it would otherwise be impossible to provide in every classroom.

Perhaps the most outstanding example in this area is "Continental Classroom," which brought Dr. Harvey White and a number of other distinguished physicists within the reach of millions of people. (Our main task here is to encourage people to reach out and take advantage of the opportunity even if it does occur at 6:30 in the morning).

This situation, in which the services of a single teacher are utilized by *many* students makes it possible to provide for that teacher much more than the usual amount of time for preparation and a great deal more in the way of personal help and teaching resources than it would be possible to provide for every teacher in every classroom. Furthermore, the mere fact that the instruction is being viewed by a great many people, including possibly some of the television teachers' peers, appears to provide the necessary incentive to cause the TV teacher to go well beyond his usual levels of preparation.

Television can give a close-up look. This is of importance not only for the showing of demonstrations, but close-up views of a teacher's face can provide a feeling of personal intimacy which is not easily attained in a lecture hall or large class. In other words, people can be good visuals on television.

Perhaps one of the most important values of the close-up in television is to direct the learner's attention to what is important at a given moment and at the same time eliminate that which is unimportant or distracting.

Television makes it easy to present visual materials. Many people have said that the advantages claimed for television are equally possessed by films and slides, and while it is true that films and slides can show close-ups of people and a wide variety of natural phenomena, it is also true that television makes it possible to do this on a much broader and more convenient scale than is possible with the usual method of distributing and screening films and slides. For instance, there is no necessity to darken classrooms, or obtain projectors and projectionists. Short film clips can be integrated into a lesson without fuss and bother, and so forth.

Because of this ease of handling, experience has shown that television encourages the use of films and slides, and that the availability of the video channel is a constant invitation to use such illustrative materials.

Similarly, other visual materials can be quickly and easily presented directly over television without the necessity of going through a time-consuming intermediate stage of

reproduction. Such visual materials might include photographs of various sizes, diagrams, flannel board displays, transparent overlays, models, and actual objects.

It is even possible for television to present these objects in juxtaposition and at a time when this seems advantageous for learning—as for instance when a technical term is superimposed over a demonstration, or foreign language vocabulary is shown simultaneously with its pronunciation by the teacher.

Perhaps the greatest possibilities available in this connection, and the ones least well used so far, are *human* teaching resources. Television, because of its reach, makes it practical and possible to use unusual human resources in a way that would be impossible in the regular classroom. For instance, outstanding specialists in various fields can appear as guests on television presentations and thus can be made accessible to thousands of students. An outstanding example of this is the use of a number of Nobel Prize winners on the "Continental Classroom" series of physics lessons over NBC. At the local level this might take the form of the use of a team of two or more teachers who each teach the aspects of a course in which he is best qualified. Or it may take the form of using local specialists in certain areas who appear as guests. The use of such human resources usually involves trouble and work for the production crew, and integrating them into the series of lessons may be difficult, but I personally believe that there are many untapped possibilities in this direction.

There is, of course, a danger of using visual materials or gimmicks for the sake of "effect" or merely for the purpose of filling the video channel. All visual materials should be justified in terms of their ability to produce a desired effect on the student. Irrelevant gimmicks may actually divert attention from what is important.

LEARNING PRINCIPLES RELATED TO TELEVISION PRESENTATIONS

Let us look at the other side of the coin for a few minutes and consider some of the requirements for effective learning to occur, in order to see how television might be used to best effect for the stimulation of learning.

Psychologists are fairly well agreed that learning involves four main elements: motivation, perception, practice, and reward. Let us consider motivation first.

The learner must want to learn. He must have the desire to achieve the outcome at which the lesson on television is aimed. This requirement has several implications for those involved in the planning and presentation of instruction via television. I would like to discuss briefly two or three of these; you will think of others yourselves.

The first implication is that the objectives of the lesson should be clearly defined in the first place, not only in terms of content to be covered, but also in terms of the

desired behavior to be learned by the students. The teacher may wish to develop observational skills, ability to apply principles in the solution of problems, or to acquire certain attitudes about the subject matter. If the objectives are clearly in mind there is a better chance of developing an effective presentation, and of stressing the significance to the students of what is presented so that it has some personal meaning for them.

Another method of stimulating motivation and interest is through the use of a quiz at the beginning of a lesson. Short questions can be effectively presented over television and then have the effect of arousing interest and of directing attention to the main ideas to be learned.

Another approach to the stimulation of interest which can be appropriately used on television is the *inductive* method of teaching rather than the more commonly used *deductive* approach. A teacher (especially at the college level) typically begins a lesson by a discussion of some general principles and supporting facts. Then (if there is time) these principles may be illustrated or "proved" by means of some demonstrations, or pictures of actual events. This is a rather sure way of losing the interest of all but the most highly motivated students.

With the inductive approach the instructor would begin with a demonstration, film, or photographs of relevance to the subject being studied. From the careful observation of this demonstration the significant principles would be developed. My suggestion would, therefore, be: Do not begin with the teacher; open with an interesting demonstration or the like which is relevant to the main theme of the lesson.

The learner must notice something. The second factor in learning follows rather closely from the first. The student must be appropriately stimulated, and in being stimulated he must be able to distinguish one thing from another, and to organize these visual and aural perceptions into the meaningful pattern that we call *understanding.*

Television offers unusual opportunities for providing a rich variety of stimulating teaching resources. The television camera's ability to provide a close-up look makes it practical to present with ease a wide variety of demonstrations using actual objects in order to develop principles or clarify abstract concepts. Still pictures, motion pictures, slides, overlays, film strips, diagrams, and clippings from magazines can also be used with a minimum of preparation, with ease in scheduling, and without the necessity of darkening classrooms. Materials in short supply (such as museum pieces) or specialized equipment can be shown to hundreds of students at one time. Some projects have facilities for making their own still pictures and slides. A few are making their own special motion pictures. In this connection, I should like to commend to your attention the idea of the concept

film—a short film, one to three minutes in length, usually silent—which is used to illustrate a single concept. Such films can be produced locally for a few dollars and can bring a variety of outside experiences to the attention of the students.

Again I would like to stress the idea of making full use of a variety of human resources. TV makes it feasible to bring together experts from different disciplines to present points of view that are not only interesting and informative but which also tend to break down the rather rigid divisions between different kinds of subject matter.

The ability of television to give a close-up look means that the viewers' attention can be directed by the cameras to what is most important, and all irrelevant and distracting material can be eliminated. This ability places considerable responsibility on the TV director who needs to be sure that the TV cameras show in *close-up* what is really important at the *exact* time that the viewers need to see it. Confusing backgrounds and other distracting material should be eliminated. This close-up technique is also important when the teacher is on camera, not only for the eye contact that is established, but for the sense of intimacy that is communicated. Lighting and backgrounds should be arranged to provide maximum visual clarity.

There are other requirements such as being able to see and hear well. These involve proper placement of receivers, size of image, and adequate sound reproduction. Pointing out to students how to learn from televised presentations can also be helpful.

The learners must do something. For learning to occur, the students must respond or participate in appropriate ways. Practice is essential. This has special implications for the television teacher, the classroom teacher, and the producer who perhaps can suggest ways of stimulating student participation.

Let us consider first the matter of student participation *during* the television lesson. This participation may take the form of *overt* observable activities such as note taking, the solving of problems posed by the television teacher, overt responses to the television teacher's questions, practicing new vocabulary, working with actual materials and other forms of concurrent participation. The learners' responses may also be *covert* or internal and may take the form of mental reflection, critical evaluation of what is presented, or the covert answering of rhetorical questions posed by the television teacher. While there are undoubtedly differences in various kinds of subject matter in terms of the relative appropriateness of overt and covert responses, it is also probably true that overt responses are more necessary with younger and less mature students, and covert responses are more appropriate for the older and more mature.

The implication of these arguments is that the television instructor should not concentrate simply on exposition of subject matter;

rather he, with the assistance of his production coordinator, should continually endeavor to develop and use techniques that encourage observation and participation by the learners *during* the television presentations.

The learner must get something he wants. Finally, we come to the fourth element for effective learning. The student should be rewarded for right responses.

We give thought to both *short*-term and *long*-term rewards. In general, responses should be rewarded or reinforced as soon as possible after they are made. Short-term rewards can include the giving of knowledge of how students have performed on their quizzes, personal commendation from friends and teachers on good performance on assignments or in recitation, and the personal satisfactions that come from the solving of problems or the gaining of new understandings.

Television offers excellent opportunities for the presentation of life-like test situations. Demonstrations can be presented and the students invited to answer questions about them, e. g., What does this demonstration show? or in a several step demonstration, the students could be asked "What happens next?" or "What did I do incorrectly?" Tests of this kind not only promote thought and practice, but telling the students how they performed can be an effective way of reinforcing learning.

Long-term rewards come from passing the course, knowing how their class is doing in comparison with others, or how they, as individuals, have performed in relation to their peers.

One rather effective technique appears to be to invite students who do well, or who carry out an unusual project, to appear on television and discuss their subject with the teacher, or demonstrate their project.

The reinforcement aspect of human learning is one that has not been very widely studied. I have the feeling that the application of some thought to reward or incentive systems in learning would pay big dividends.

Let me say in closing, that I think the television producer working closely with the television instructor has a great responsibility and opportunity to contribute to the effectiveness of instructional presentations over television by suggesting ideas, methods of presentation, visual materials, and the like and in handling them in such a way as to ensure the application of the above-mentioned principles. Equally important is the fact that in his role of director, he is the gatekeeper in the learning situation. If he is a skilful craftsman, he will see that the right picture is on the screen at the right time, that irrelevancies are eliminated, and that the presentation is logical and holds attention. If he is inept, he can easily ruin an otherwise good lesson and adversely affect the learning of hundreds of students. The responsibility is great and is not to be taken lightly.

Whither Educational Broadcasting?

A systems approach would cut across school districts and could aid ETV

By **Paul L. Chamberlain**

Taken from a speech before the Institute for Education by Radio - Television, Columbus, Ohio, May, 1959. Mr. Chamberlain is a manager of marketing for General Electric Company's technical products operation.

I would like to explore here the future of educational television *solely* in the primary and secondary schools. These are the levels which have, and which are, receiving the initial impact of our expanding population.

It is estimated that this year, more than 3½ billion dollars will be invested in educational facilities throughout the nation. While the greatest portion of this will be for classroom space, it is interesting to note that the national shortage will still stand at more than 200,000.

With this appalling situation, why is it that taxpayers continue to defeat school-construction bond issues at special referendums? Especially, when in private conversation, few taxpayers will deny the need for additional classrooms!

This is not an easy question to answer. State legislators and school administrators have given serious thought to the situation and it would be misleading to say they are not perturbed. However, some are still possessed with the

thought that education, like the nation, can only be saved by a spendthrift philosophy that could bring ruin to both education and to the economy.

In spite of the tax revolts we have witnessed in several states during recent months, the search is continuing for new areas of taxation. Apparently one simple fact is being overlooked. No government—be it federal, state, city, village or school district—can build one schoolroom or increase one teacher's salary without first raising the money by taxing the public. And, the public is balking.

Yet, we the public must assure the education of our children to meet the challenges of the future, and it is our responsibility to see that they are adequately prepared. If we are to do that, then we must reappraise the costly methods of education of the past and present. Has our system of school-district centralization been carried too far? or not far enough? Certainly it has become costly. Can we effect savings if we consolidate one more step?

First, let's consider the staggering costs of our present system of centralization. Next, let's consider what efficiencies and savings can be realized without sacrificing quality of education *if* we go one step further in centralization. The step I suggest is the consolidation of instruction across many school districts through the use of television.

To illustrate the tremendous cost of present centralization, I will use a hypothetical centralized school district in my own central New York State. This hypothetical district represents a composite of several districts in the area.

My composite school district was centralized in 1950, following a long fight among the several towns affected. The average school tax was approximately $15 per $1,000 of assessed valuation. Today, nine years later, the average school tax is $45 per $1,000, a threefold increase. I am sure this is not unique for my hypothetical district.

Now, what is the reason for this increase in taxes? Because of the expanding population, taxpayers have had to authorize more than eight million dollars for construction of new school buildings. They have rejected other bond issues for about half this amount, and the end of the tax increase is not in sight. My district still needs a new elementary school to relieve crowded conditions and to eliminate the double sessions.

Unless we make more efficient use of educational facilities, property taxes will have to increase another 40 per cent in the next six years, since school costs are expected to double.

The boom in babies is going to continue. Last year, in New York State, a record 362,000 births were reported. Based on present educational practices, the state will need 3,700 additional classrooms each year just to take care of the expected increase in enrollment. Add this to our present shortage of 9,500 classrooms, and the 2,000 new ones needed annually merely

to replace obsolete facilities—and the cost of our classroom needs in New York State becomes astronomical, especially when you consider that the cost per classroom ranges from $25,000 to $50,000.

Then we will need new school busses—at an average cost of about $8,000 each—to transport the *new* children to the *new* classrooms in the *new* schools we will have to build. Love never saw such an eternal triangle.

Billions upon billions of dollars have been invested in education by state legislatures and by school districts, as well as by foundations. Without these funds, education could not possibly have grown as it did over the last century. The money for all this has come from a prosperous people, who on the whole, also enjoy the highest standard of living of any people anywhere. But, the standard of living which has made these funds possible, is being threatened by steadily increasing taxation. When the tax load reaches the point where the people's standard of living is threatened by reduced real income, education itself will be in jeopardy.

Something has to be done before that point is reached—and time is running out. Some have suggested we make more efficient use of our present school buildings by sending pupils to school in two or three shifts. I don't think this is the answer. Statistics indicate that wherever this has been tried, there has been an alarming increase in juvenile delinquency.

Others suggest we use our school buildings the year round, with staggered vacations. This appears to have merit and warrants further consideration. However, where it has been tried, it has met with objections. Parents like to have their vacations coincide with those of their children.

Neither of these suggestions solves the problem of the shortage of qualified and capable teachers and the increased budgets required to hire them—if they could be found.

According to estimates, 70,000 *new* teachers will be required over the next eight years in New York State. About 35,000 of these, or 50 per cent, will be required because of increased enrollment. The other 35,000 will be required for normal replacement due to marriage, retirements, etc. My state is presently 1,000 teachers short of its normal requirements. And next year, the state is faced with a large retirement, with too few available replacements. Similar conditions prevail in other states.

There is little doubt that the time has arrived when we must take stock of our educational efforts. We need a method which will offer more economy in educational costs and more efficient use of teaching talents. That method is broadcast educational television.

Educational groups have done a remarkable job of proving the feasibility of educational television. They have accomplished such an excellent job that few now doubt that teaching can be done successfully by television. They have experimented with educational television at various age levels,

both in the classroom and in the home. However, I am going to confine my remarks to what is apparently the largest and most urgent problem, that is the elementary and secondary schools.

Recently, the heads of the three largest universities of an eastern state predicted a minimum increase of 100 per cent in state college and university enrollment by 1970. One said existing facilities can accommodate only 8 per cent of that increase. Alarming as that may sound, the colleges and universities still have time on their side.

But the tidal wave of record enrollments has already hit the elementary and secondary schools and may never recede.

I believe the time has come to take educational television out of the *laboratory-proven* stage and apply it *full-scale* to help solve the economic problems outlined earlier. Instead of concentrating on what we can do for *one* school, or for *one* community, by using *one* TV station, I suggest we explore what we can do with a *system* of educational stations serving an entire area of *many* school districts. We can definitely offer *more economy* in educational costs, and make *more efficient* use of teaching talents, if we consolidate *one more step* in our present system of school-district centralization.

My good friend Martin Codel, of *Television Digest,* has quoted me as saying that within ten years, the number of educational TV stations may well be greater than the number of commercial TV stations. I know that some people suspected I had been indulging in marijuana when that statement appeared. But similar suspicions existed fourteen years ago when I did some "crystal-balling" on the future of entertainment TV. Let me quote from a speech I gave May 1, 1945, to the Advertising Club of Boston:

"The public may have doubts as to whether plastic bodied automobiles and such things as helicopters will be ready right after the war, but there is no doubt in their minds about television. Television can have a great effect on our cultural and habit patterns. It may well change our way of life to a greater extent than the automobile, the radio, or the movies. It will have a profound effect on education, amusements, and advertising.

"Statements such as these bring up the question, just where is television today and how fast will it grow postwar?

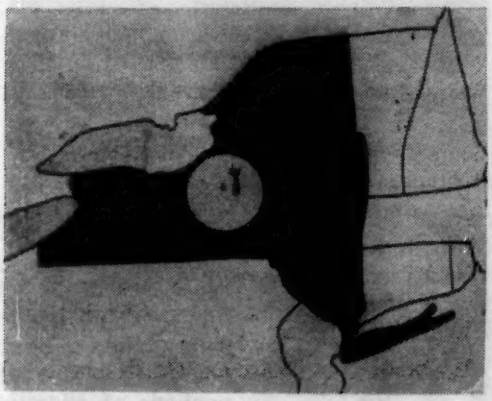
"There are nine television stations now operating—three in New York City, one in Philadelphia, one in Schenectady, two in Chicago, and two in Los Angeles. They have a potential audience of about 22 million people.

"By late summer, three more stations will be on the air: one in the New York area, one in Indianapolis, and one right here in Boston where—as you probably know — Twentieth Century Fox has taken over and is remodeling what was formerly experimental station WIXG. These three stations will raise the potential television audience to twenty-five million people.

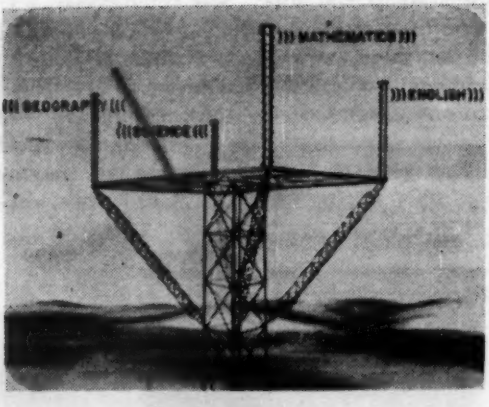
"We believe that 90 to 100 stations will be in operation two years after the war. In fact there are 119 applications on file with the Federal Communications Commission right now.

"Within five years after the war we believe that at least 140 to 150 stations will be on the air serving nearly two-thirds of the population of the United States, and within ten years, there may well be 500 or more television transmitters in operation."

That statement caused quite a stir fourteen years ago. So did my statement regarding the future of educational television when it appeared in *Television Digest* a few months ago. Today, there are some 40 educational television stations. If educational television is to outnumber the approximately 550 commercial TV stations, then we have a lot of growing to do. But it can be done—with a systems approach. I repeat my prediction that within ten years the number of educational stations may well be greater than the number of commercial stations.



I am going to outline a broad-brush proposal of how this can be done. I propose the utilization of a multiplicity of educational TV stations on a consolidated basis. This system would spread simultaneous programs from *several* educational stations across *many* school districts from a *central point*. There would be at least *four* stations serving all school districts in a radius of thirty or forty miles. Such a system could serve all grades, kindergarten through twelve, in each school district.

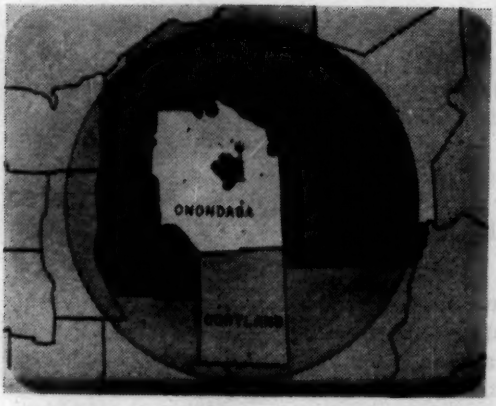


Television instruction would be available an average of about a third of the seven-hour school day, to each level of education. For instance, one station would program a total of two hours and twenty minutes at the first-grade level; two hours and twenty minutes at the second-grade level; and two hours and twenty minutes at the third-grade level during the school day. The other three stations would be telecasting programs to other grades at the same time.

This *systems approach* is what I meant earlier when I mentioned that perhaps *we should take one more step* in our process of centralization. Admittedly, there will be many problems involved and details to be worked out. There will undoubtedly be many standard practices involved which may be obsoleted by such a systems approach. There will be questions regarding the practicality of such a system. There will be fears about the loss of "home rule."

But we have a solid core of experience in the solution of many problems and in the promoting of educational television. The economic problems of our present methods of education cry out for solutions. We already know the economies and the increased efficiencies that educational television can bring. We have already planted the seeds for growth of educational television and have cultivated the vineyards, so to speak. Now is the time to emphasize the economies of such a system right in the legislative halls of our states and our school districts.

But first, we must get the economic facts together. It won't be difficult. I have done a little searching in my own area of Syracuse and have come up with some interesting statistics which I will use as an example.



In a radius of forty miles from Syracuse there are 92 school districts, with 452 schools, in 6 counties. Total public school enrollment in this area is approximately 178,000. State aid for education is more than 44½ million dollars annually. In addition, the real-estate taxes for schools and education amount to more than 32 million dollars—for a total of 77 million dollars budgeted for education in the 6-county area. And, believe me, we still have classroom shortages and teacher shortages.

It is estimated that in one county alone, taxpayers will be in debt for more than 100 million dollars for public school construction by 1970, unless rigid economy is practiced. The towns are plunging into debt for generations to come, and many young married couples could lose their homes if they are unable to afford the climbing taxes.

We *must* improve the quality of American education at a price we can afford. In Dade County, Florida, some 5,600 pupils are participating in a classroom educational-television experiment, using one station. According to figures published in *Newsweek* magazine, important financial savings have been realized without sacrificing quality of education. With TV classes numbering 300 or more students, teaching by TV is saving the school system $300,000 this year—the equivalent of 60 teachers' salaries. Moreover, with auditoriums and lunchrooms utilized for TV sessions, 76 new classrooms did not have to be built, lighted, or maintained, and additional savings are estimated at more than 1 million dollars. This is but one experiment which proves that educational television is economically feasible.

From an economic standpoint alone, there are many reasons why this system of instruction should

be expanded into every county and every state in the nation.

I have seen estimates that about one-third of the space in the average school is designed for classroom use. The other two-thirds is taken up by auditoriums, cafeterias, gyms, halls, offices, etc.

Since the average auditorium will seat about 500 students, the cafeteria another 200, and the gyms at least another 500 students, we have in these three locations seating capacity for approximately 1,200. All three of these locations may readily be used "as is" or adapted with sliding walls for the individual monitoring of several different programs at one time, thus adding to the normal capacity of individual classrooms.

The classical idea of 25 students per teacher no longer holds true in many crowded schools today. In many instances, the number of students per teacher has increased to the point where individual classroom instruction by conventional methods is seriously hampered, and the teachers are tremendously overloaded. How can we successfully teach more students with the same number of teachers we now have, and will continue to need?

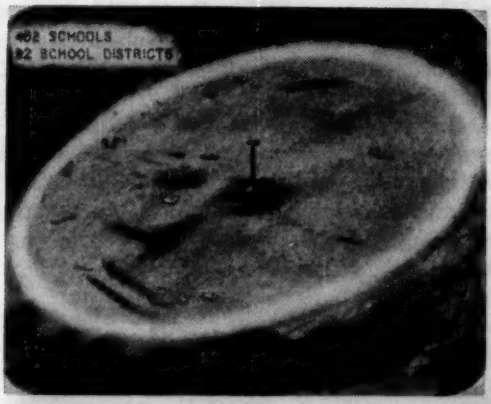
One way is by using large-screen television projection equipment, or a multiplicity of receivers in classes of 300 to 400, if the auditorium or gymnasium is used for instructional purposes. The classroom instructors will, of course, handle the regular assignments of discipline, examinations, discussion, and homework appraisals.

Later, assuming the temporary use of auditoriums and gymnasiums is successful, architectural plans for new schools—which will be needed to at least replace presently obsolete buildings—will be designed with rooms for large-scale viewing.

For the present, however, the above-mentioned locations may be used by the simple addition of viewing-monitors or receivers, thus improving the efficiency of use of present facilities.

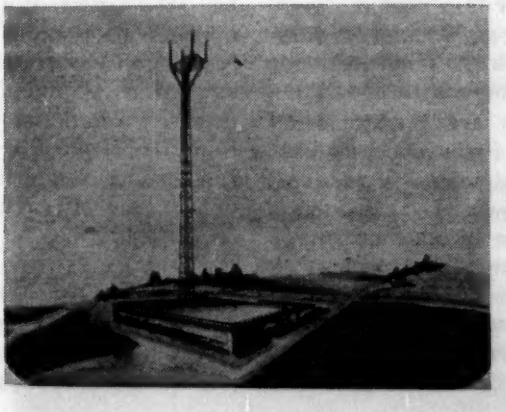
If we multiply the number of students in each of the gymnasium-auditorium locations by the number of school buildings served by an area-wide TV system, we can readily see the large number of students served by the instructor, without the expense of building many additional classrooms and trying to obtain many additional, but probably unavailable, teachers.

In the Syracuse area, there are about 600 fifth-grade classes in 6 counties. In this grade, there are 16,000 pupils. All could be taught at one time by just one television instructor, rather than by the 435 normally needed classroom instructors. Please let me stress here, we do not mean to suggest that presently employed teachers will be displaced. We cannot teach all subjects on a full-time basis by television. Instructors will be needed to teach non-TV subjects and to perform other functions in the TV-taught subjects.



However, we will be making maximum use of our best educational talents. The point we want to emphasize is that by serving our 6-county area of 452 schools, in 92 districts, by a multi-channel educational television *system*, tremendous economies will be realized, and the quality of instruction improved.

We suggest that the area be served by four UHF transmitters, sending programs from central studios or classrooms, to each room in grades one through twelve. This would permit an average of one-third of the school day to be taught by television in each of the twelve grades. For constructional

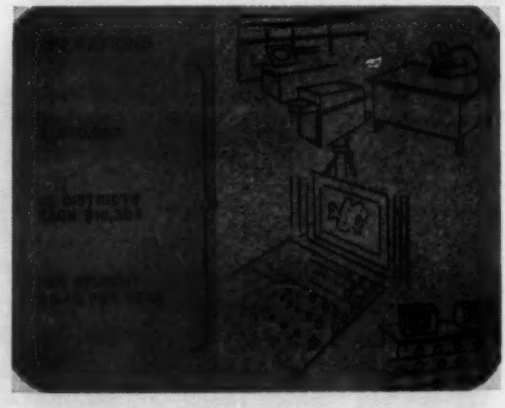


economies, all four transmitters would be housed in one building. The four antennas would be mounted atop one tower.

Estimated costs of transmitters, studio facilities, building, land, road access, and classroom distribution equipment and receivers, is $2,640,000. This amount would be spread over 92 school districts.

Breakdowns or outages from the use of substandard equipment spell lost instruction time, high maintenance expense, and a possible loss of faith in both the system and in the medium of instruction. For this reason, we advise against the use of anything but first-class equipment in such an installation.

Now, let's estimate the cost of



This averages to less than $28,700 per district, or less than the average cost of one additional classroom per district. Pupil cost for the district amounts to $14.81.

These costs are predicated on the use of first-class broadcast television equipment. If desired, they may be lowered by a reduction in quantity or by substitution of equipment that is less expensive, but not as convenient to work with. In the long run, the use of substandard equipment is poor economy.

operating the television system for one school year. We have checked operational costs of several successful ETV stations. They average about ½ million dollars annually. Operational costs for our four-station plant would probably run in the neighborhood of 1½ million annually. This is a quick estimate and may be high.

However, the cost per district per year would be $16,300 or $8.42 per student. This is less than two per cent of the present annual

per-student cost of $493 in the ninety-two districts.

It was recently stated in Syracuse, by a noted state educator, that the development of a major educational television *station* in that city appears to be far off. The chief stumbling block, it was said, is the high cost of educational television. For *one station*, perhaps this reasoning is justifiable. But the economics of the *systems approach* across county boundaries make educational television so inexpensive that legislators can no longer afford *not to consider* educational television, especially when each school district shares the cost in proportion to the student population.

Several reliable manufacturers are available who can assist in planning for the television system. They will contract for installation of the facilities, and if desired, will also help with the initial training of technical personnel, and will even contract to service equipment and keep it in operation.

In fact, the Electronic Industries Association, the national trade association representing manufacturers of *all* electronic equipment, including radio and television, is now sponsoring the preparation and publication of a simple, concise, and nontechnical guidebook on the uses of educational television.

This comprehensive booklet covers both broadcast and closed-circuit television. It is being prepared for the association by Dr. Philip Lewis, director of instruction materials, for Chicago's Board of Education. Representatives of educational foundations, educational broadcasters, universities, schools and government agencies, are assisting in the preparation of this book. Primary objective of this guidebook is to furnish educators, school boards, and other school administrators with a yardstick for evaluating various educational television uses and systems. It will be a valuable planning aid.

Now, let's briefly consider some so-called fringe benefits that could be enjoyed for little or no additional costs. For instance, time could be allocated to specialized groups, such as the gifted students, the retarded, and the slow learners, without sacrificing the learning time needed for the average students.

The automating of industry today is amplifying the need for more skilled workers and fewer unskilled. A prominent educator recently stated that functional illiteracy is expected to result in the technological unemployment of more than 15 million people by 1970, unless serious steps are taken or expanded in literacy-education programs.

Many illiterates are now enrolled in basic education programs. However, far greater numbers are reluctant to enter such programs for one reason. They are too proud or too ashamed to admit their illiteracy. I was quite surprised recently to read that there are an estimated 250,000 illiterates in the

state of Ohio. Educational television, through such basic courses as the three R's, can help to reduce this illiteracy by bringing instruction right into the privacy of his home, where a person can learn without ever having to admit his plight to neighbors. If this sounds far-fetched, let me quote *Newsweek* magazine again, where it was recently reported that a man "admitted that even his wife didn't know he couldn't read. For eleven years, he has been holding a newspaper for an hour every night, pretending to read it. Finally, he just couldn't stand it any more and went into a course of adult education." Educational television might have saved that man years of silent embarrassment.

To reach and hold the large audiences we are talking about, in a *systems approach*, TV instructors must become experts in visual presentation. They must be able to compete successfully with their commercial cousins — "detergent dramas," adult westerns, Mickey Mouse and baseball games — or they will lose some of their audience. But just as surely as entertainment television has progressed to Leonard Bernstein and the New York Philharmonic, educational television will also live up to its potential.

There is no other way that the vast number of students of all ages can be reached by great teachers as effectively as through the use of this electronic medium. Robert W. Sarnoff, chairman of the board of the National Broadcasting Company, recently said that if Dr. Harvey E. White, one of the best physics teachers in the country, were to divide his "Continental Classroom" student body into five standard college classes a day, teaching them in the usual way would take more than 1,300 years.

There is no reason why our suggested ETV system could not rebroadcast similar programs of great teachers to our six-county area. Our gifted high school students, and other fast learners, thus exposed to the great teachers, would receive tremendous benefits, and the time spent would in no way be deducted from the needed efforts necessary to educate the vast numbers of average students.

Every day, I am made acutely aware of the progressive ignorance of workers in the electronics field, through no fault of their own. Our warehouse of knowledge has increased so rapidly since the beginning of World War II, that it is absolutely impossible to keep abreast of current developments with our present means of learning. Various groups of specialists can no longer communicate with each other because of this progressive ignorance. Thus, we must use every means at our command to minimize this effect. Educational television to date has proved that learning by TV in many cases can be quicker, more effective, and more easily retained than by conventional methods.

I am not proposing that we abandon our present methods of

instruction, but *I am definitely urging* that multi-station educational television be adopted to supplement our learning on a broad national scale.

To summarize, the systems approach to educational television in the primary and secondary schools will:

1. Help to alleviate the shortage of qualified and capable teachers by making more effective use of teaching talents.

2. Pave the way for tremendous economies in over-all educational budgets by making more efficient use of present and planned school facilities.

3. Reduce future construction costs by designing more rooms for large-scale teaching, thus lowering the rising costs of classroom duplication.

4. Apportion capital and operational costs over many school districts. The initial investment will be lower than the cost of one additional classroom per district.

What is Advertising's Responsibility in ETV?

Advertiser looks toward separation in TV of editorial and advertising functions

My recent voyages into the somewhat uncharted channels of educational TV have stirred up some interesting cross currents.

I have been battered by some of my own brethren in advertising—but have had many, many others volunteer to help.

I have been chided by some of the advertising trade press for getting off the reservation—but have been praised by others. The magazine that chided me, strangely enough, has long been editorializing that the best way for advertising men to get rid of the huckster image is by good deeds in the community. (Assorted editors, I suppose.)

I have been accused by some of the professional TV critics of pleading for educational TV and yet not spending my clients' money that way—of talking out of both sides of my mouth. This is not so. I have been talking out of either side of my mouth.

By **John P. Cunningham**

A speech before the Institute for Education by Radio-Television, Columbus, Ohio, May, 1959. Mr. Cunningham is Chairman of the Board of Cunningham & Walsh Inc. He has been in the advertising agency business forty years, and currently is on the Advisory Council of the American Association of Advertising Agencies, and vice chairman of the Advertising Federation of America.

One side says that we must get the great force of TV harnessed to upgrade the national mind. The other side says this is not primarily the job of advertisers — although they must and will help.

Yet both sides of my mouth seem to be able to live comfortably side by side, harmoniously contributing to my sustenance.

I believe the reason for all this mild, and so far very amiable, controversy is lack of understanding.

So—before stirring up a new round of pebble-throwing — I would like to come to some sort of understanding on definitions and responsibilities.

First, definitions.

For clarity, I will divide all TV programing into three different categories: Entertainment TV, Cultural TV, and Educational TV. There is, of course, much overlapping among them.

Entertainment TV is all commercial and generally sponsored.

Cultural TV is provided by the commercial networks and broadcasters. It is either sponsored (if they can sell it) or it is sustaining. In any event, it is paid for by the advertisers of America—because the broadcasters have no other source of income.

Educational TV is strictly noncommercial and presents carefully planned programs for in-school and out, directed by competent educators. It, of course, has cultural overtones also.

Let us examine the responsibilities of the commercial people—first, of the broadcasters.

- To give the people of America the kind of programing they want. But this means all the people, including the minorities—who may be great in individual numbers—who want cultural programing.
- To their stockholders. Under the terms of this free enterprise system, they are obligated to protect stockholders' investments and return an annual profit on that investment.

Second, the responsibilities of the advertisers:

- They have a responsibility as good citizens of the corporate community to make a good product, to price it fairly, and to sell and advertise it in good taste.
- They, too, have a responsibility to their stockholders—to produce a profit.

Last, the responsibilities of the advertising agency:

- Our primary responsibility is to sell goods. We are the custodians of our clients' money, and we must use it in what we think are the best ways to sell the most goods.
- We, too, would like to make a little money.

Now, having circumscribed the ring in which I will fight and having laid the platform which I will defend, let me wade into the problem.

First, how much cultural and educational programing can we expect from the c o m m e r c i a l people?

More than we are now getting, I'm sure—but never enough to satisfy the intellectually elite, the eggheads, (and I hope my head is slightly oval) or the professional

critics. Which is as it should be, because they (the critics) must always be ahead of us trying to lead—or around behind us snarling at our heels trying to goad us into greater leadership. Just as do their counterparts in drama, literature, and the arts.

There is a chance of more enlightening programs coming, due to the gradual emancipation from slavery to ratings. Recent studies show that high sales do not necessarily follow high ratings. Nor does product identification.

Advertisers, furthermore, are beginning to recognize that they cannot reach their total market on TV only with the stereotyped high-rated shows. For instance, research says that millions of consumers with pocketbooks never look at Westerns, high-rated though they may be.

Advertisers must—to reach their total market on TV—sponsor a mixture of programs of different audience appeal. This can be done with spot TV, by varied spectaculars, or by multiple participation on network.

Believing, as I do, that there can be no progress unless somebody steps into controversial fields, I would now like to take a few steps in that direction.

I believe that the editorial function on TV will some day be separated from the advertising, as it is in the public prints. I believe we are already in a state of visible transition.

It may work out this way ultimately (a slow, long-drawn-out ultimately):

The advertiser will buy a block of commercials—let's say twenty in a thirteen-week cycle. In fairness to all advertisers these must be rotated on various kinds of shows of various ratings, so that each advertiser will get about the same average rating. The commercial will have to stand on its selling feet.

This will accomplish many good things.

It will end blind devotion to ratings.

It will soften the monopolies on good prime time by a few large-spending advertisers.

It will cut down a lot of imitation and mediocrity in programing.

It will relieve sponsors of concern for the content of the program. It has been often claimed that TV editorial vitality has been smothered by sponsors' fear of offending.

It will free TV editors of commercial control and restriction . . . enable them to try new things . . . enable them to test more cultural and enlightening programing.

It may produce some great new TV editors of the airwaves (a possibility which some people fear, but not I—not as long as we have twelve independent channels).

But, as things are today, please do not expect much cultural sponsorship from the advertisers of packaged goods. On the other hand, we may hopefully expect much more from companies which sell services—or need a respected corporate image.

Packaged goods (soaps, cigarettes, cosmetics) must reach their

mass markets on programs of broad interest levels. Whether they ride the current wave of Westerns or quizzes, it does not matter—but they must ride whatever current wave there is. If a chewing gum or a soft-drink manufacturer removed any considerable part of his TV money from mass-interest shows over to cultural TV, his competitors would eat up his market. It would be just as if he took a large group of his salesmen off the road and required them to call on only the cultural-minded, while competitive salesmen continued to sell in the mass markets.

The manufacturer would be violating his trust to his stockholders.

If you do not like this situation, your quarrel is not with advertisers—but with one of the so-called "pillars of the free enterprise system."

HOWEVER, where respect for the manufacturer is an important factor in the making of a sale—or where the selling of services is involved, such as the telephone company, public utilities, gasoline companies—we find more and more clients leaning toward more enlightening programs. Which accounts for the sponsorship by AT&T of the "Telephone Hour" and, with others, of "Continental Classroom." And Texaco's sponsorship on radio of the Metropolitan Opera over the years.

And there are many more such companies than the rating-devotees will admit.

It is much easier, of course, to sell to clients, to boards of directors, or to stockholders, a tangible (such as rating figures) than an intangible (such as respect for the maker). But the surest way to get more enlightening programs on the air is to raise the cultural interests of the people.

That is one very large reason why the proponents of more cultural TV on commercial stations should get behind noncommercial educational channels. Television is the one instrument through which sleeping interest in science and the arts can best be aroused.

It reaches homes where books are seldom read.

It reaches homes where beauty is absent.

It has an exposure-power hitherto unknown in communications. As we all know, but I repeat for emphasis, the average American citizen sits before that little square screen for over three hours a day—for over twenty-two hours a week. More than at any other occupation except w o r k i n g and sleeping.

Locked in that mess of tubes and wires behind the screen is the capacity to raise the intellectual and scientific attainments of our whole people to new levels. Until this television force is released, I don't see how any of us in advertising can be completely comfortable about the tremendous commercial franchise we hold in this medium.

For one thing, it can give us a much better informed and intelligent electorate. For instance, sessions of Congress should be televised on a regular schedule. Dreary

though they may be, let us see our representatives in action — or in inaction. Let us see the empty seats. Let us also see the men who are on the job.

Let us send Congress into the classrooms of the country, to bring life to the tomes and the teachings. Let our children examine first-hand what we hopefully expect them to improve.

Let our school children also look into sessions of the Supreme Court—not the trials perhaps—but certainly the majestic simplicity of this ultimate Court on the days of decision—those famous Mondays.

The United Nations, too, is worthy of a wider theatre.

Television's coming force in the field of international understanding cannot be over-emphasized. International broadcasting is very near. That was the portent of the Atlas satellite which tossed President Eisenhower's Christmas words back to earth.

International television will enable the nations of the earth to exchange their cultures — and their national aspirations — from fireside to fireside. It holds promise of being the greatest force yet in the promotion of permanent peace.

The great immediate thing that television can do is to make a college degree available to every single American. The only action required of the television student would be to go to a central place in his city four times a year to take an examination. It might take the TV student five to ten years to acquire the credits for a degree now piled up in our four bright college years —but what is that to a hungry mind?

Television can even do some things better than the college classroom. It can give students front-row close-up seats for important demonstrations. It can bring the finest laboratory facilities to remote schools which could not otherwise afford them. It can provide post-graduate courses to college graduates, while they work.

It can share the few great teachers with the many.

To give all our people equal opportunity will require a nation-wide, twenty - four - hours - a - day clearance that will reach every television set in the United States —either on a single-channel or multi-channel basis.

The situation is in such a beautiful mess! It's such an all-balled-up, splendidly twisted complex that it's going to be fascinating fun to untangle.

UHF channels galore and few sets to receive them! VHF sets galore and few VHF channels left for education to reach them! None in New York, Washington, or Los Angeles. None left for over half the populace. Can VHF stations be purchased? Where's the money? Will the military give up part of its VHF band? No, say some; it will cost the military too much for new UHF equipment. Some say the military will demand more of our few VHF channels. And the military doesn't have to tell why. Military secret.

Well, it's an educational secret —and I wouldn't want it to go outside of this planet—but a cross-

country educational channel is inevitable. It's just a question of how fast we can clip the syllables off that word "inevitable."

As I say, it's going to be such fun to help unkink this contorted coil. Just to show you how much fun you can have trying to solve it, let me give you my latest brainstorm. I begin with a few hypotheses.

ETV will generally be a lonesome thing and not a family affair. My hypothetical eighteen-year-old son wants to take a chemistry course from nine to ten every night (and, boy, is that hypothetical!). At the same time, his old man wants to see the ball game. Goodbye, education!

So this coming common situation immediately points to the importance of the low-priced portable set, which the boy can take up to his room. Fortunately, portable TV set sales are beginning a terrific boom, just as portable radio sets did. It won't be long before a portable TV set will be in the majority of homes—as the family second set.

If we could only get UHF receivers included in them!

Now it costs $25 to $50 to have a UHF receiver installed in your present family set. If we could only get every manufacturer of portables to include UHF receiving equipment in every new VHF portable—it would only cost a few dollars at the factory—we'd be getting somewhere. We could soon activate all those indolent UHF channels—effectively.

The first big problem of educational TV might be over.

How do you get the manufacturer to do this? The set would cost perhaps only $129.95 instead of $126.95. The smart manufacturer would advertise, "For a few dollars more, open up to your family the coming great new world of UHF broadcasting" or "Be sure your set will also give your children the great educational advantages of UHF." Only a few dollars more!

I have no doubt such a manufacturer would increase his sales, but we want all manufacturers to do it. If they all did it, they'd have no competitive selling argument. (For a few dollars more!)

So they won't all do it. Some will want to shout: "A few dollars less! Without that useless UHF equipment!"

So far, I seem to be getting nowhere.

What about legislation from Congress requiring all new portable sets to have UHF receivers?

Legislation against the freedom of manufacturing? Ugly thought! I wish I hadn't had it.

At this point, I had lunch with a respected competitor, Frank Kemp of Compton Advertising. I laid my idea so far on the table. He immediately said, "Maybe it wouldn't be so difficult. There's a 10 per cent excise tax on TV sets. Legislation might be passed reducing the tax on portables that have the addition of UHF. Then they would cost no more than those without. Then all manufacturers would include it alongside

VHF to stay competitively even."

Well, I'm sure there must be at least one king-sized bug in this idea, but I haven't had time to find out.

But you see what fun you can have!

A major problem is one of understanding between the commercial people and the educational people. There's a gap to be bridged and I hope we can bridge it. Sometimes we don't even speak the same language.

When I talk to some educators about the job to be done when we do get a national educational network—the necessity of "packaging" the idea, under a selling "slogan" or a national educational "war-cry," and "selling" it to the people in terms of their own selfish advancement — they seem to cringe a little, politely.

But if I say we must focalize the idea and, with the proper hortatory stimuli, direct the meandering mass mores into more humanistic disciplines, I am on their side of the fence—but I feel slightly uncomfortable.

I must say that I have found the educators far more understanding of the obligations of the commercial people—as I outlined them earlier—than I have the commercial people in the objectives of the educational side.

I was very pleased to hear John F. White, president of the National Educational Television and Radio Center, say at a conference in Washington: "The commercial station—any commercial station—is on the air because some individual or group invested money, with the *honorable* hope that from that investment they would receive a fair financial return. Hence every program decision it makes must of necessity give serious consideration to what that decision does to its audience size or make-up and, therefore, to its profit statement. In other words, it is in business to MAKE MONEY."

Then he goes on to say, "The educational or *non*commercial station is *NOT* in business to make money. It is in business to *SPEND* money—every cent it can lay its hands on—in service to the community or region it covers."

This is not only nice defining but also very praiseworthy gap-closing.

Now what can we do to move along faster on this goal toward our educational network? And, by the way, I think we all know that one country-wide channel will not be enough. Educators are going to have a real advertising-men's Donnybrook when it comes to deciding who's going to educate whom on what—on one channel.

Back to the first step, one nationwide channel. There's the mechanical side of the problem, station allocations, and such. Then there's the matter of money. I'm sure that enough of the latter would take care of the former. VHF stations can be bought at a price.

So far, generous amounts of seed money have come from the big foundations, such as the Ford Foundation.

May I remark somewhat parenthetically here that the money these foundations dispense so well and so nobly comes right out of the profits of American business. I like to think that even advertising had something to do with flooding the roads with millions of those little old "Tin Lizzies" that became the foundation of the Ford Foundation.

But, as we all know, much of the money must come from federal and state educational funds and from local effort. (This will perhaps be the major source of operating funds—once the stations are established.) But the need now is for founding money—to build or acquire stations and to equip them.

American business is already contributing, and I am sure that once the objectives and potentialities of ETV are more widely understood business will respond even more generously. The job is to make it stop and think about it a bit.

There are many corporations in this country which spend each year individually as much as 10 to 40 million dollars in television. They owe the medium a lot and they know it. Since TV gives them so much, if we can only get them to stop and think about *ETV* a bit I am sure they will move it up high on their annual budget of gifts to civic and charitable causes. In many companies this is quite substantial. They will give some locally—as many do now—and even more nationally.

That is one job to be done.

Another job to be done is with the broadcasters. There is still some lingering competitive fear here. Why? Magazines and newspapers do not cringe when new textbooks are published. It is hard to understand. Cut down their audience and rating a little perhaps? But that little will be endemic across the board when the country-wide n e t w o r k comes. There will be no competitive disadvantages here. This lingering fear will soon disappear.

If there were only twelve printing presses in the world and most of them were turned over to entertainment and a d v e r t i s i n g, wouldn't we clear one of them, but fast, for the educational function? We probably wouldn't because we would already be too deeply steeped in stupidity.

I was delighted to find that already there are many commercial TV stations which give not only technical help—but also annual money contributions to the educational stations in their own cities. Commercial broadcasters have already given $1,173,373 to thirty-one of the forty-three activated educational stations.

Of course, there is always the fear that if UHF is activated, it may also provide additional commercial outlets—more competition to share the advertising monies.

A reassuring plan of allocation by the FCC to protect current broadcasters' investments ought to allay this fear—just as the airlines are competitively protected today by the CAB. I'm sure the

FCC will be fair to the broadcasters who have done so much to develop TV and have given the people a new pleasure that ranks alongside the automobile today in popular appreciation.

The job, then, is one of allaying fears and securing money—step by step. We must step as fast and surely as we can—because we cannot afford, in the world today, not to set this powerful instrument to the task of upgrading our national mind.

Once it is well underway, advertising men will be needed to do a big job—*the* big job! We must bring it into public focus by our most skilled merchandising techniques and sell the advantages of educational TV to the masses—in terms of individual advancement, potential income, position, and mental enjoyment.

I'm sure we'll undertake this problem, perhaps through the Advertising Council, and—whether we grab the ball and run with it, or walk it up and down Madison Avenue, or run it up the flagpole—we'll help set the advantages of ETV before the national mind, so that it will desire to upgrade itself.

All of us in business, I'm sure, recognize the great unused educational power of television and would like to see it exercised. But we tend to walk away from this problem and say it is not ours. We tend to say that it is the responsibility of the educators, the legislators, the broadcasters.

I say let us walk away from it no longer.

As custodians of so large a share of the airwaves, it is the problem of advertising people. As responsible citizens of the United States, it is our problem.

It's going to take a lot of doing—by a lot of people—because all too many of us still worship at the altar of that sluggish old Roman god: Status Quo.

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Each volume of the *JOURNAL* beginning with volume 9 is available on microfilm from University Microfilms, 313 North First Street, Ann Arbor, Michigan.

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